

From johnmb at nc.rr.com Sun Nov 1 09:01:11 2015  
From: johnmb at nc.rr.com (john)  
Date: Sun, 1 Nov 2015 09:01:11 -0500  
Subject: [BoatAnchors] FS: Stack of Fair Radio catalogs/flyers  
Message-ID: <56361B27.7010607@nc.rr.com>

Looks like ~11 different mailings, including 4 or 5 annual issues, plus flyers. How's \$20 plus 5 for shipping.

Paypal is OK.

73  
John K5MO  
--  
III

From gsantacana at gmail.com Sun Nov 1 20:25:22 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Sun, 1 Nov 2015 21:25:22 -0400  
Subject: [BoatAnchors] GPR 90 Hum  
Message-ID: <CA01yix35aP5ESPBTu+YdcG\_uLcGbuPTwU4PPUXa9-88QAadtsQ@mail.gmail.com>

Gentlemen,

My GPR 90 was completely recapped 6 years ago. Now I am hearing an audible hum upon turning it on. The hum gradually disappears as the set warms up. I doubt that the new electrolytics have already gone bad. Could it be rectifier related? It is not audio hum because it stays with the audio control at minimum. Any other place where this hum can come from?

Best 73s

Guido Santacana KP4FAR

From arc5 at ix.netcom.com Mon Nov 2 08:34:55 2015  
From: arc5 at ix.netcom.com (David Stinson)  
Date: Mon, 2 Nov 2015 07:34:55 -0600  
Subject: [BoatAnchors] Correction: Trouble Shooting Tip: HQ-170 Bad IF  
Message-ID: <9069C4C89EA940A891C4AD1EBEB31A27@DaddyPC>

Re: the shorted IF bypass in the HQ-170>

Wrong component value.  
I grabbed a "red multiplier" resistor out of my parts bin, figuring I'd "cut and try" for best performance.  
The first worked so well I didn't change it,

but I mis-read the "modern" color code, missing the first digit. I thing was an 8200 Ohm.

From knjhanlon at msn.com Mon Nov 2 11:36:07 2015  
From: knjhanlon at msn.com (JAMES HANLON)  
Date: Mon, 2 Nov 2015 09:36:07 -0700  
Subject: [BoatAnchors] [Boatanchors] GPR-90 Hum  
Message-ID: <BLU184-W7198C7100CCEBA6345FF26A02C0@phx.gbl>

Guido,

I've never had the privilege of owning a GPR-90 - I almost brought one home from the Dayton Hamvention flea market one time, but it was outside in the rain and it was missing an IF transformer and I passed on it - what a fool I was!

Anyway, if the hum does not change with the audio gain control, then I would look for something associated with the first audio stage, half a 12AX7 I think, or the 6V6 audio output stage. You could check hum on the B+ line to the 6V6 by temporarily attaching a decent-sized electrolytic filter cap from the screen, pin 4, to ground. The B+ feed to the 12AX7 first audio stage goes through the "Audio Selectivity" switch. There's a 20 mfd electrolytic attached to pin 8 of that switch, the swinger contact. Temporarily attach an additional filter cap there to see if the hum is associated with the B+ feed to the first audio stage.

If neither of those do any good, then start looking at other places where ac could be entering the picture. To check for possible leakage from filament to cathode in the two audio tubes, try replacing the tubes and see if that makes any difference. Or possibly disconnect the filaments from the ac line in the receiver and temporarily drive them from an external, dc power supply.

Another very old trick that my older brother used when we were kids to troubleshoot our home-brew modulator was to put a capacitor in series with a set of high impedance headphones, something like a 0.1 to 0.5 mfd so that it would pass the hum fairly well, attach one side of the phones to the receiver chassis, and use the open capacitor lead as a probe to listen in on various spots in the amplifier chain. The capacitor will act as a dc block, but it will pass any ac signal including the hum. If you are lucky you will be able to find spots where there is no hum and spots where the hum exists. Slide the phones off your ears when you first connect the probe to any point, because you are likely to get a loud click as the capacitor charges up to the B+ level at that point. An oscilloscope would of course do the same thing for you if you happen to have one.

Good luck!

Jim, W8KGI

From 1oldlens1 at ix.netcom.com Mon Nov 2 12:09:54 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Mon, 2 Nov 2015 09:09:54 -0800  
Subject: [BoatAnchors] [Boatanchors] GPR-90 Hum  
In-Reply-To: <BLU184-W7198C7100CCEBA6345FF26A02C0@phx.gbl>  
References: <BLU184-W7198C7100CCEBA6345FF26A02C0@phx.gbl>  
Message-ID: <563798E2.9040003@ix.netcom.com>

Have you tried the hum balance pot, R-94? If the hum is slight it may be the problem although I would think the volume control would still affect the level.

If its 120Hz hum its likely to be a bad filter cap even if they have been changed recently, new ones can still be bad. I don't like bridging caps since a bad cap can have high leakage and it is not changed by adding another cap. Just substitute it. If its 60Hz hum it might be a heater to cathode leak. Best way to find it is to substitute tubes. Since the volume control doesn't affect it its probably V-10 or V-11.

The GPR-90 has feedback around the audio amp so it has fairly good audio for a simple single ended amplifier.

On 11/2/2015 8:36 AM, JAMES HANLON via BoatAnchors wrote:

> Guido,

>

> I've never had the privilege of owning a GPR-90 - I almost brought one home from the Dayton Hamvention flea market one time, but it was outside in the rain and it was missing an IF transformer and I passed on it - what a fool I was!

>

> Anyway, if the hum does not change with the audio gain control, then I would look for something associated with the first audio stage, half a 12AX7 I think, or the 6V6 audio output stage. You could check hum on the B+ line to the 6V6 by temporarily attaching a decent-sized electrolytic filter cap from the screen, pin 4, to ground. The B+ feed to the 12AX7 first audio stage goes through the "Audio Selectivity" switch. There's a 20 mfd electrolytic attached to pin 8 of that switch, the swinger contact. Temporarily attach an additional filter cap there to see if the hum is associated with the B+ feed to the first audio stage.

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> Another very old trick that my older brother used when we were kids to troubleshoot our home-brew modulator was to put a capacitor in series with a set of high impedance headphones, something like a 0.1 to 0.5 mfd so that it would pass the hum fairly well, attach one side of the phones to the receiver chassis, and use the open capacitor lead as a probe to listen in on various spots in the

amplifier chain. The capacitor will act as a dc block, but it will pass any ac signal including the hum. If you are lucky you will be able to find spots where there is no hum and spots where the hum exists. Slide the phones off your ears when you first connect the probe to any point, because you are likely to get a loud click as the capacitor charges up to the B+ level at that point. An oscilloscope would of course do the same thing for you if you happen to have one.

>

> Good luck!

>

> Jim, W8KGI

>

> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From gumbear at pacbell.net Mon Nov 2 11:42:48 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Mon, 2 Nov 2015 08:42:48 -0800

Subject: [BoatAnchors] GPR 90 Hum

In-Reply-To: <CA01yix35aP5ESPBtu+YdcG\_uLcGbuPTwU4PPUXa9-88QAadtsQ@mail.gmail.com>

References: <CA01yix35aP5ESPBtu+YdcG\_uLcGbuPTwU4PPUXa9-88QAadtsQ@mail.gmail.com>

Message-ID: <A97718946542429088058E53AB44B6B8@KB6NAX>

> .....Any other place where this hum can come from?

Most likely a tube, Guido. Troubleshoot by substituting tubes from detector to audio output.

Arden Allen

KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From richardlo at admin.athabascau.ca Mon Nov 2 15:59:46 2015  
From: richardlo at admin.athabascau.ca (Richard Loken)  
Date: Mon, 02 Nov 2015 13:59:46 -0700 (MST)  
Subject: [BoatAnchors] For Halloween: "The Long Nights of Uncle Tom"  
In-Reply-To: <563504E3.9020702@comcast.net>  
Message-ID: <Pine.PMDF.4.44L.1511021357150.1084-100000@admin.athabascau.ca>

On Sat, 31 Oct 2015, Robert Nickels via BoatAnchors wrote:

> "Uncle Tom - people write to you with serious questions, how do you give  
> those smart-alec answers?"  
>  
> To which Tom replied:  
>  
> "On a Royal portable".

Then there was the angry reader who wrote in about how Tom abused each and every person who wrote in. So he ended off saying "come on Tom, insult me!"

And Tom's reply was, "You?"

--

Richard Loken VE6BSV, Unix System Administrator : "Anybody can be a father  
Athabasca University : but you have to earn  
Athabasca, Alberta Canada : the title of 'daddy'"  
\*\* richardlo at admin.athabascau.ca \*\* : - Lynn Johnston

From dave at horsfall.org Mon Nov 2 16:39:57 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Tue, 3 Nov 2015 08:39:57 +1100 (EST)  
Subject: [BoatAnchors] For Halloween: "The Long Nights of Uncle Tom"  
In-Reply-To: <Pine.PMDF.4.44L.1511021357150.1084-100000@admin.athabascau.ca>  
References: <Pine.PMDF.4.44L.1511021357150.1084-100000@admin.athabascau.ca>  
Message-ID: <alpine.BSF.2.11.1511030839080.65662@aneurin.horsfall.org>

On Mon, 2 Nov 2015, Richard Loken via BoatAnchors wrote:

> Then there was the angry reader who wrote in about how Tom abused each  
> and every person who wrote in. So he ended off saying "come on Tom,  
> insult me!"  
>  
> And Tom's reply was, "You?"

I must remember that one...

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From ddillman at igc.org Mon Nov 2 17:39:57 2015  
From: ddillman at igc.org (Richard Dillman)  
Date: Mon, 2 Nov 2015 14:39:57 -0800 (GMT-08:00)  
Subject: [BoatAnchors] WTB: Vintage Speaker in Metal Case  
Message-ID: <22505805.1446503997742.JavaMail.root@elwamui-royal.atl.sa.earthlink.net>

Gents:

My restored Technical Radio LRR-5 receiver is really performing well. But I need a speaker to go with it to do justice to the push-pull 6V6's in the output. For those unfamiliar with the LRR-5 you can see one (not mine) at the link below. Scroll down.

<http://www.radioblvd.com/WWII-PostWar%20Hamgear.htm>

The speaker I have in mind would be about 8", in a metal case with grey crackle finish. A sloped front would be cool but not necessary. The LRR-5's output is 600 ohms so a speaker capable of matching that impedance would be cool. But I'm certainly willing to add a matching transformer to the right speaker.

All leads and suggestions appreciated.

RD

=====  
Richard Dillman  
Chief Operator, Coast Station KSM  
Maritime Radio Historical Society  
<http://www.radiomarine.org>  
=====

From gsantacana at gmail.com Mon Nov 2 19:31:25 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Mon, 2 Nov 2015 20:31:25 -0400  
Subject: [BoatAnchors] GPR 90 Hum  
In-Reply-To: <A97718946542429088058E53AB44B6B8@KB6NAX>  
References: <CA01yix35aP5ESPbtu+YdcG\_uLcGbuPTwU4PPUXa9-88QAadtsQ@mail.gmail.com>  
<A97718946542429088058E53AB44B6B8@KB6NAX>  
Message-ID: <CA01yix2TH2iquGcxuRfBFh074EW64QSTUxEEGcoR9UbQpnu9QA@mail.gmail.com>

Hi Arden,

That's exactly where I will start before going into the radio. Many Thanks.

73s

Guido

Guido Santacana KP4FAR

On Mon, Nov 2, 2015 at 12:42 PM, Arden Allen <gumbear at pacbell.net> wrote:

> .....Any other place where this hum can come from?  
>>  
>  
> Most likely a tube, Guido. Troubleshoot by substituting tubes from  
> detector to audio output.  
>  
> Arden Allen  
> KB6NAX  
>  
> He who is cruel to animals becomes  
> hard also in his dealings with men.  
> We can judge the heart of a man by  
> his treatment of animals.  
> ?Immanuel Kant  
>

From knjhanlon at msn.com Tue Nov 3 13:52:39 2015  
From: knjhanlon at msn.com (JAMES HANLON)  
Date: Tue, 3 Nov 2015 11:52:39 -0700  
Subject: [BoatAnchors] [Boatanchors] WTB: Vintage Speaker in Metal Case  
Message-ID: <BLU184-W86EB48081C03232D73C7FEA02B0@phx.gbl>

Consider a speaker intended to go with a National HRO-50 or HRO-60 or NC-183. All of these receivers had push-pull 6V6 output. The speakers will have 8 ohm impedance.

Jim, W8KGI

From ddillman at igc.org Tue Nov 3 13:55:35 2015  
From: ddillman at igc.org (Richard Dillman)  
Date: Tue, 3 Nov 2015 10:55:35 -0800 (GMT-08:00)  
Subject: [BoatAnchors] [Boatanchors] WTB: Vintage Speaker in Metal Case  
Message-ID: <6627311.1446576935763.JavaMail.root@mswamui-cedar.atl.sa.earthlink.net>

Consider a speaker intended to go with a National HRO-50 or HRO-60 or NC-183. All of these receivers had push-pull 6V6 output. The speakers will have 8 ohm impedance.

Jim, W8KGI

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Thanks for the suggestion Jim. Those are stylin' speakers but I was hoping for something not carrying the logo of another company - something more generic.

Best,

RD

=====  
Richard Dillman  
Maritime Radio Historical Society  
<http://www.radiomarine.org>  
=====

From infomet at embarqmail.com Tue Nov 3 14:04:14 2015  
From: infomet at embarqmail.com (Wilson)  
Date: Tue, 3 Nov 2015 14:04:14 -0500  
Subject: [BoatAnchors] Any Builders out There?  
Message-ID: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

Apparently I have suddenly become old, or at least realized that I have. I know dozens of hams, but I think I am the only one actually using anything HB, with the exception of a nice 1929 Hartley or two.

A good bit of my stuff was built (or misbuilt) by others, but I've rescued it from oblivion and made it work properly. I enjoy making things work more than I like fighting pileups, but I do do some DXing and some ragchewing.

So who's out there with HB gear, TX or RX?  
Who uses 4-125s, 813s, 810s, 807s, 866s, 814s, 6AG7s, 6L6s, or V-70s?  
Who's afraid of their power supply?  
Any receiver builders (my weak point)?

Along with my boatanchors (Signal Shifters, 310-Bs, HROs, Drakes, Hammarlund, Heaths) I have some real ship anchors!  
Also transformers I can't pick up and gobs of small transformers and chokes.



Anyone with ideas about how to get rid of this stuff (when the time comes) so my heirs won't have to?

Is there a retro equipment builder's/operators group or list out there anywhere? I could use some sympathy.

Wilson  
W4BOH

From wlfuqu00 at uky.edu Tue Nov 3 15:07:37 2015  
From: wlfuqu00 at uky.edu (Fuqua, Bill L)  
Date: Tue, 3 Nov 2015 20:07:37 +0000  
Subject: [BoatAnchors] [Boatanchors] Any Builders out There?  
In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34AF762B0@ex10mb02.ad.uky.edu>

Looking forward to suggestions, I have same problem.  
73  
Bill wa4lav

---

From: Boatanchors [boatanchors-bounces at puck.nether.net] on behalf of Wilson [infomet at embarqmail.com]  
Sent: Tuesday, November 03, 2015 2:04 PM  
To: BOATANCHORS  
Cc: boatanchors at theporch.com  
Subject: [Boatanchors] Any Builders out There?

Apparently I have suddenly become old, or at least realized that I have. I know dozens of hams, but I think I am the only one actually using anything HB, with the exception of a nice 1929 Hartley or two.

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Wilson  
W4BOH

-----  
Boatanchors mailing list  
Boatanchors at puck.nether.net  
<https://puck.nether.net/mailman/listinfo/boatanchors>

From wb3fau55 at neo.rr.com Tue Nov 3 18:21:59 2015  
From: wb3fau55 at neo.rr.com (wb3fau55 at neo.rr.com)  
Date: Tue, 3 Nov 2015 18:21:59 -0500  
Subject: [BoatAnchors] [Boatanchors] Any Builders out There?  
In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
Message-ID: <20151103232159.AG048.23775.root@cdptpa-web07>

Well, Wilson, no, I am not HBing anything right now. I have been mostly a renovator, I did rework a Globe King 500B a few years ago. must have done a pretty good job, I am still using it. I just finished working on a HQ-120X, an NC-300. Now working on a R-390A. I also own a T-368F-running.

Age here is 60, still working and looking forward to retirement and working on my old junk. 73s Russ.

---- Wilson <infomet at embarqmail.com> wrote:

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Is there a retro equipment builder's/operators group or list out there anywhere? I could use some sympathy.

Wilson  
W4BOH

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Boatanchors mailing list  
Boatanchors at puck.nether.net  
<https://puck.nether.net/mailman/listinfo/boatanchors>

From rbsingl at ilstu.edu Tue Nov 3 19:18:50 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Wed, 4 Nov 2015 00:18:50 +0000  
Subject: [BoatAnchors] Any Builders out There?  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>

Wilson,

My last big homebrew project was over 10 years ago (a three tube 4CX800 160-10 meter amp) so it is time for another big project. I have done several small projects since then (power supplies, small accessories) but mostly repair and restoration work. I sent my final retirement paperwork in yesterday so as of December 31 I am officially retired and once I finish the Drake DSR-1 currently on the bench (synthesizer doesn't want to lock on the 8s) along with a T-368F and Viking Invader 2000 that followed me home from the Peoria IL hamfest last month it will be time to start using up some parts I have been collecting for the past several years.

The first project will be a homebrew CW transmitter to go with my late 1920s Aero 4 tube receiver and after that I plan to switch gears and build the solid state receiver that showed up in several early 1970s ARRL handbooks about the time I was first licensed. I also picked up a set of parts that someone was collecting to build an AM transmitter using 813 finals modulated by another pair of 813s. At some point I want to build a modulator and power supply to get a Bendix TA-12 on the air. My 12 year old daughter wants to be included in design and building so that will be a fun activity for both of us.

Rodger WQ9E

Dr. Rodger B. Singley  
Professor of Marketing

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf  
> Of Wilson via BoatAnchors  
> Sent: Tuesday, November 3, 2015 1:04 PM  
> To: BOATANCHORS <BOATANCHORS at puck.nether.net>  
> Cc: boatanchors at theporch.com  
> Subject: [BoatAnchors] Any Builders out There?

From kd5byb at kd5byb.net Tue Nov 3 19:40:16 2015  
From: kd5byb at kd5byb.net (Ben Hall)  
Date: Tue, 3 Nov 2015 18:40:16 -0600  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
Message-ID: <563953F0.6040709@kd5byb.net>

Hi Wilson and all,

On 11/3/2015 1:04 PM, Wilson via BoatAnchors wrote:

> So who's out there with HB gear, TX or RX?

I have a few HB receivers that I've built following the designs of others. Most of them are solid-state, not tube, as whenever I've started down the path of building anything tube that's homebrew, the lack of or price of parts has always frustrated me. I've abandoned more planned tube RX projects than I care to admit.

I've got a good "junk box" or should that be called a "junk garage" hahaha, but not one that's sufficiently stocked yet to be able to do most tube HB projects.

(I'd really like to build a regen from Bruce Vaughn's NR5Q (SK) book "Surviving Technology", but still looking for affordable tuning capacitors, etc etc etc... )

I'll also admit, my code sucks, and its usually too much of a circus here at the house to do it even if I didn't suck at it, so one-tube HB transmitters are just not do-able here, yet. Maybe if I retire, if I live that long.

I do enjoy tube gear - it's fun to repair, fun to operate, fun to tinker with, and has a soul that I find lacking in newer, solid-state gear. While I've got solid-state receivers that will blow the doors off of anything tube, they just don't have the same experience.

> Who's afraid of their power supply?

I have built and enjoy building power supplies. I can't say they scare me, but I'm afraid of them enough to not do anything stupid. I respect them and what they are.

On the bench behind me is a switching supply built from an Elektor Magazine article that takes 0 to 30 VDC and outputs 0 to 300 VDC at 100mA or so. Eventually, I want to build a larger unit modifying the Elektor design to get closer to 400 VDC at 200 mA, using it as a dynamotor replacement. Maybe for the SCR-183 setup, the GF/RU setup, or maybe even one of the WS-19's.

Got a design for a power supply for the ART-13 on the drawing board, plus another one for the WS-19 set. A supply for the Chinese 139 RX/TX setup is nearly finished, as is one for the TCS RX/TX setup.

> Anyone with ideas about how to get rid of this stuff (when the time comes) so my heirs won't have to?

I'm probably one of those darn youngin's here, having just turned 42. Dang. I subscribed to the list when I was 22. Twenty years. Wow.

I'll give you my few cents worth, worth what you paid for it.

There was an estate sale in Huntsville Alabama that I attended. It was run by a small, family-run estate sale company, who IMHO, is a great example of an operation that is making a profit, but is truly concerned about helping families tie up the loose ends of their recently dearly departed. (Loose Ends by MJ is the company, I have no fiduciary interest, just that the name is really what she does)

The estate had just about whatever ham radio stuff you wanted. Tubes, radios, receivers, hardware, tools, test equipment, and on and on and on. (I bought a Heathkit HV power supply and an early WWII two-stroke Homelite 110 VDC generator.)

From time to time, there has been concern voiced here about our beloved treasures going into the dumpster and/or that the old-radio or ham radio hobby is dying. Well...let me tell you...the place was PACKED and people were buying stuff at what I considered sub-eBay but greater than hamfest prices. Very little of it showed up on eBay, FWIW, I was watching with great interest to see if that would happen. The sale had been running two days before I got there and much of the "higher-than-I-would-have-paid" gear was already sold!

Huntsville AL is an interesting town. While it has a very high concentration of people that make good money (engineers, scientists) due to NASA, Redstone Arsenal, and Research Park, the people here have a real reputation for being cheap. As evidence of this, I once knew some

folks on the Chamber of Commerce who were actively lobbying mid to high-end restaurants and retail establishments to set up shop here, preventing the money flow from Huntsville to Nashville or Birmingham. The Chamber people always mentioned the high average salary to these places, and the places always retorted that sure, the average salary is good here, but that the people just don't spend it, so it wasn't worth the investment! That has changed in the last few years, we've got a PF Chang's and Cabela's just opened up shop. I've been to both, but as evidence of my cheapness, I bought nothing at Cabela's and I think we've eaten at PF three times in three years, maybe? ;)

I say that to make the point that we're probably an average market here as the cheapness evens out the good salaries.

My advice to folks thinking towards the future is to identify a place like MJ's operation who are good, family people, and let them take care of it. Unless your stuff is real crap, people will buy it, and it won't go into the trash. While the folks will take their cut, IMHO, if its a good company run by good people, I'm okay with that. This is the same advice I'll give my now ten year old son when my wife and I are getting into our final years.

Just my few cents worth...

thanks much and 73,  
ben, kd5byb

From wa9jml at frontier.com Tue Nov 3 20:18:55 2015  
From: wa9jml at frontier.com (Steve Berg)  
Date: Tue, 3 Nov 2015 19:18:55 -0600  
Subject: [BoatAnchors] [Boatanchors] Any Builders out There?  
In-Reply-To: <B7E8B5B4A202074084E2515A7B10A7F34AF762B0@ex10mb02.ad.uky.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<B7E8B5B4A202074084E2515A7B10A7F34AF762B0@ex10mb02.ad.uky.edu>  
Message-ID: <56395CFF.9020903@frontier.com>

Right now, I am renovating a Clegg 22er and a Clegg 66er. When that is done, I will be working on my Gonset G76, and on adapting a Drake power supply to run it. My eventual dream, now that I am retired, is to get my command sets working on 80 and 40 meters. I have not found a 40 meter command set transmitter yet, so I may come up with something else to go with the BC-455 on that band.

73,

Steve WA9JML

From kb8tad at gmail.com Tue Nov 3 20:47:30 2015  
From: kb8tad at gmail.com (Rich Post)  
Date: Tue, 3 Nov 2015 20:47:30 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <563953F0.6040709@kd5byb.net>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<563953F0.6040709@kd5byb.net>  
Message-ID: <CAEJr0FsrfpJEEESmqw3\_xF5TDMBpRi6m0eEYtf3X7k-==+k7y-g@mail.gmail.com>

Hi Wilson,

I for one like homebrew as can be seen with this scratch-built 1930s ARRL Handbook regen with an SW-3 look  
<<http://www.ohio.edu/people/poslr/bapix/30sRegen.htm>>

or rebuilding and finishing or repairing a homebrew transmitter as originally intended

<[http://www.ohio.edu/people/poslr/bapix/HB\\_xmtr.htm](http://www.ohio.edu/people/poslr/bapix/HB_xmtr.htm)>  
<<http://www.ohio.edu/people/poslr/bapix/HB6meter.htm>>

Using recycled stuff to build a high power low voltage variable supply  
<<http://www.ohio.edu/people/poslr/bapix/HBpowerS.htm>>

I also get a kick out of studying and re-purposing stuff  
<<http://www.ohio.edu/people/poslr/bapix/TV50.htm>>

Earlier this year, built a tripler power supply for a farm set (90 volts from a cheap 24 volt transformer) and a matching "A" supply. (results now in a magazine column, not on my website)

and just finished a power supply and a separate module for break-in for a BC-696A WWII Command transmitter (soon to be a magazine article)

I have a homebrew triple parallel 813 amplifier sitting in the garage that has been beckoning me. Bought cheap at a hamfest because many hams shy away from and don't understand such stuff. Will study it for planning the next steps. It needs a scary PS as does an early Navy version of an ART-13. Am in the process of looking for parts and pieces.

However, I find lots of boatanchor equipment and, in general, old radio stuff to be interesting.

So homebrew stuff? Yes but not exclusively. And no time for boredom in my retirement! Eclectic electric is more my style and I'll bet many of the

list members here are in a similar mood.

Rodger, welcome soon to emeritus status! Am thoroughly enjoying that time of life.

Rich KB8TAD

>  
>

From k0al at mchsi.com Tue Nov 3 21:07:55 2015  
From: k0al at mchsi.com (k0al at mchsi.com)  
Date: Tue, 3 Nov 2015 21:07:55 -0500 (EST)  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
Message-ID: <1611008513.105229654.1446602875082.JavaMail.zimbra@mchsi.com>

Wilson et al,

Current HB project here is recreating my first transmitter, a Lew McCoy design featured in January 1953 issue of QST. Then there is the W6TC design HBR-11 that has been languishing far too long.

I keep getting side tracked with restoration projects - KWS-1, NC-183D, HRO-5TA1, etc.

Making small projects, tuners and such fill in the small voids when there is no propagation.

I am 75 and enjoying ham radio as much, if not more, than ever before. Biggest loss is the many ham friends I seem to have outlived.

Then there is the exciter I made in 1960 using a Collins 70E8A vfo driving what was called a "bandbox" circuit driving a 2E26 which I had hoped to follow with a 4-125 PA.

73,

Al, K0AL

----- Original Message -----

From: Wilson via BoatAnchors <boatanchors at theporch.com>  
To: BOATANCHORS <BOATANCHORS at puck.nether.net>  
Cc: boatanchors at theporch.com



Sent: Tue, 03 Nov 2015 14:04:14 -0500 (EST)  
Subject: [BoatAnchors] Any Builders out There?

Apparently I have suddenly become old, or at least realized that I have.  
I know dozens of hams, but I think I am the only one actually using anything HB,  
with the  
exception of a nice 1929 Hartley or two.

A good bit of my stuff was built (or misbuilt) by others, but I've rescued it from  
oblivion and made it work properly.  
I enjoy making things work more than I like fighting pileups, but I do do some  
DXing and some ragchewing.

So who's out there with HB gear, TX or RX?  
Who uses 4-125s, 813s, 810s, 807s, 866s, 814s, 6AG7s, 6L6s, or V-70s?  
Who's afraid of their power supply?  
Any receiver builders (my weak point)?

Along with my boatanchors (Signal Shifters, 310-Bs, HROs, Drakes, Hammarlund,  
Heaths) I have some real ship anchors!  
Also transformers I can't pick up and gobs of small transformers and chokes.

Anyone with ideas about how to get rid of this stuff (when the time comes) so my  
heirs won't have to?

Is there a retro equipment builder's/operators group or list out there anywhere?  
I could use some sympathy.

Wilson  
W4BOH

-----  
BoatAnchors mailing list  
BoatAnchors at theporch.com  
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From dave at horsfall.org Wed Nov 4 00:03:28 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Wed, 4 Nov 2015 16:03:28 +1100 (EST)  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
References: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>

On Wed, 4 Nov 2015, Singley, Rodger via BoatAnchors wrote:

> My 12 year old daughter wants to be included in design and building so

> that will be a fun activity for both of us.

Fantastic! I tried to get my harmonics involved, but by then they'd been corrupted by video games...

My dear old dad wasn't into radio as such, but he did encourage my interest in electronics, once he knew that I wasn't about to electrocute myself (long story).

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From gumbear at pacbell.net Wed Nov 4 01:16:06 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Tue, 3 Nov 2015 22:16:06 -0800

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>

References: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
<alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>

Message-ID: <BFDCD66CBA8B4493B158F5C842124B5E@KB6NAX>

> .....Fantastic! I tried to get my harmonics involved, but by then  
> they'd been  
corrupted by video games...

There was a report on the news tonight that the average hours teens spend doing screen and media time is nine hours per day. Their brains are being trained for multitasking but their school homework suffers. Maybe they could an be trained to manipulate a soldering iron with just their thumbs but I'm afraid all hope is lost.....

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From dave at horsfall.org Wed Nov 4 01:57:19 2015

From: dave at horsfall.org (Dave Horsfall)

Date: Wed, 4 Nov 2015 17:57:19 +1100 (EST)

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <BFDCD66CBA8B4493B158F5C842124B5E@KB6NAX>

References: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
<alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>  
<BFDCD66CBA8B4493B158F5C842124B5E@KB6NAX>  
Message-ID: <alpine.BSF.2.11.1511041743560.97460@aneurin.horsfall.org>

On Tue, 3 Nov 2015, Arden Allen wrote:

> There was a report on the news tonight that the average hours teens  
> spend doing screen and media time is nine hours per day. Their brains  
> are being trained for multitasking but their school homework suffers.  
> Maybe they could an be trained to manipulate a soldering iron with just  
> their thumbs but I'm afraid all hope is lost.....

No wonder that my kids went catatonic when I snipped the power lead to  
the TV set :-(

I tried a power-point locker, but Daughter Dear figured out how the key  
worked.

So I mangled the key-slot, but Sainted Son found a screwdriver...

OK then, you guys win...

I love my kids; they take after me :-)

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From spr at earthlink.net Wed Nov 4 02:53:39 2015  
From: spr at earthlink.net (Scott Robinson)  
Date: Tue, 3 Nov 2015 23:53:39 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <BFDCD66CBA8B4493B158F5C842124B5E@KB6NAX>  
References: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
<alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>  
<BFDCD66CBA8B4493B158F5C842124B5E@KB6NAX>  
Message-ID: <5639B983.2030809@earthlink.net>

To quote the chorus from a song from the '90s called "Space Invaders":

"He's hooked, he's hooked  
His brain is cooked."

Peace,

Scott

On 11/3/15 10:16 PM, Arden Allen via BoatAnchors wrote:

>> .....Fantastic! I tried to get my harmonics involved, but by then  
>> they'd been

> corrupted by video games...

>

> There was a report on the news tonight that the average hours teens  
> spend doing screen and media time is nine hours per day. Their brains  
> are being trained for multitasking but their school homework suffers.  
> Maybe they could an be trained to manipulate a soldering iron with just  
> their thumbs but I'm afraid all hope is lost.....

>

> Arden Allen

> KB6NAX

>

> He who is cruel to animals becomes  
> hard also in his dealings with men.  
> We can judge the heart of a man by  
> his treatment of animals.  
> ?Immanuel Kant

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From wb3fau55 at neo.rr.com Wed Nov 4 05:57:38 2015

From: wb3fau55 at neo.rr.com (wb3fau55 at neo.rr.com)

Date: Wed, 4 Nov 2015 5:57:38 -0500

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>

Message-ID: <20151104105740.0FU8S.28824.root@cdptpa-web07>

Hey Rodger, you got a T-368F? I have one also. I have only talked to one other,  
you have #3. 73s Russ.

---- "Singley wrote:

> Wilson,

>

> My last big homebrew project was over 10 years ago (a three tube 4CX800 160-10  
meter amp) so it is time for another big project. I have done several small  
projects since then (power supplies, small accessories) but mostly repair and  
restoration work. I sent my final retirement paperwork in yesterday so as of  
December 31 I am officially retired and once I finish the Drake DSR-1 currently on  
the bench (synthesizer doesn't want to lock on the 8s) along with a T-368F and  
Viking Invader 2000 that followed me home from the Peoria IL hamfest last month it  
will be time to start using up some parts I have been collecting for the past  
several years.

>

> The first project will be a homebrew CW transmitter to go with my late 1920s

Aero 4 tube receiver and after that I plan to switch gears and build the solid state receiver that showed up in several early 1970s ARRL handbooks about the time I was first licensed. I also picked up a set of parts that someone was collecting to build an AM transmitter using 813 finals modulated by another pair of 813s. At some point I want to build a modulator and power supply to get a Bendix TA-12 on the air. My 12 year old daughter wants to be included in design and building so that will be a fun activity for both of us.

>

> Rodger WQ9E

>

> Dr. Rodger B. Singley

> Professor of Marketing

>

> > -----Original Message-----

> > From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf

> > Of Wilson via BoatAnchors

> > Sent: Tuesday, November 3, 2015 1:04 PM

> > To: BOATANCHORS <BOATANCHORS at puck.nether.net>

> > Cc: boatanchors at theporch.com

> > Subject: [BoatAnchors] Any Builders out There?

>

>

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Wed Nov 4 09:57:45 2015

From: arc5 at ix.netcom.com (David Stinson)

Date: Wed, 4 Nov 2015 08:57:45 -0600

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

Message-ID: <65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>

I built a single-tube, power pentode crystal oscillator on a wooden board in the style of what a 1930s "poor kid" would have made to match my early 1935 HRO receiver. I call it "Old Fireball." It works well but is very hard on crystals.

<http://home.netcom.com/~arc5/OldFireball.jpg>

(I was trying a Pi output in this picture)

List members who are kinder to me than I deserve provided crystals. I've used it both on CW and Phone.

About 35 watts out.

Must use the "big blank" type crystals

or it will bust them every time.  
And of course, I dropped my 3890 AM net "big blank"  
and broke it. Arrrrrg!  
They ain't making big blanks any more.

73 Dave AB5S

From 1oldlens1 at ix.netcom.com Wed Nov 4 11:43:23 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Wed, 4 Nov 2015 08:43:23 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
Message-ID: <563A35AB.2050309@ix.netcom.com>

Its interesting to look at the ads for crystals in old radio  
magazines; many advertise they can take high power without fracturing.  
Amplification was expensive so many transmitters were simply high power  
oscillators or the oscillator worked at high power to lessen the amount  
of amplification necessary in later stages.

At one time I built a lot of stuff but the sort of construction  
done pre-transistor is almost impossible now unless you collect old  
parts. And, yes, I've built real breadboard style on a piece of plywood.

On 11/4/2015 6:57 AM, David Stinson via BoatAnchors wrote:

> I built a single-tube, power pentode crystal oscillator on a wooden  
> board in the style of what a 1930s "poor kid" would have made to match  
> my early 1935 HRO receiver. I call it  
> "Old Fireball." It works well but is very hard on crystals.  
>  
> <http://home.netcom.com/~arc5/OldFireball.jpg>  
> (I was trying a Pi output in this picture)  
>  
> List members who are kinder to me than I deserve  
> provided crystals. I've used it both on CW and Phone. About 35 watts out.  
> Must use the "big blank" type crystals or it will bust them every time.  
> And of course, I dropped my 3890 AM net "big blank" and broke it.  
> Arrrrrg! They ain't making big blanks any more.  
>  
> 73 Dave AB5S  
>  
>  
>

> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From knjhanlon at msn.com Wed Nov 4 13:35:09 2015  
From: knjhanlon at msn.com (JAMES HANLON)  
Date: Wed, 4 Nov 2015 11:35:09 -0700  
Subject: [BoatAnchors] Any Builders out There?  
Message-ID: <BLU184-W66DD4B1D30E3BB615EC54A02A0@phx.gbl>

Steve,

If you can't find a 40 meter Command transmitter, look for the one that covers 5.3 to 7 mc instead, the BC458 etc. It can easily be pulled up into 40 meters by just resetting the screw-locked variable capacitor inside of the oscillator shield box on top of the chassis and then redipping the final by resetting the screw-locked variable cap in parallel with the amplifier cap underneath the chassis. Tracking will be just fine across all of the 40 meter band as long as you don't mess with the slugs in the oscillator and amplifier coils. Back in the good old days, those of us who couldn't afford a BC459 did this all the time. The same trick can be used to pull a BC457 into 80 meters and to pull the 2 to 3 mc transmitter into 160 meters.

73,

Jim, W8KGI

From gumbear at pacbell.net Wed Nov 4 14:41:04 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Wed, 4 Nov 2015 11:41:04 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <563A35AB.2050309@ix.netcom.com>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A35AB.2050309@ix.netcom.com>  
Message-ID: <D6FA6CDC61E24755998D81B215995FAA@KB6NAX>

> .....Its interesting to look at the ads for crystals in old radio  
magazines; many advertise they can take high power without fracturing.

Amplification was expensive so many transmitters were simply high power oscillators or the oscillator worked at high power to lessen the amount of amplification necessary in later stages. ....

Rich, my fossilized brain still remembers from those old mags the tool used to protect crystals from excessive drive. An incandescent lamp bulb in series with a crystal was a good indicator of crystal current. Too much current the crystal overheats and eventually fractures. But of course you have to break a half dozen crystals to calibrate the lamp! Proceed with caution...

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From listtown at nanniandjack.com Wed Nov 4 15:59:53 2015  
From: listtown at nanniandjack.com (List Manager)  
Date: Wed, 04 Nov 2015 13:59:53 -0700  
Subject: [BoatAnchors] =?utf-8?q?Any\_Builders\_out\_There=3F?=  
Message-ID: <d82014349eab504644d4b486700cbf0e@nanniandjack.com>

Date: Wed, 4 Nov 2015 00:18:50 +0000  
"Singley, Rodger" <rbsingl at ilstu.edu> wrote:

> My 12 year old daughter wants to be included in design and building so that will be a fun activity for both of us.

Roger and Gang-

As usual, I am jumping in a tad late, but I thought I'd add a happy note for Roger and those of you still with impressionable minds in the house.

During one of the last last gasp of Heathkit, they offered a 46" rear projection TV kit! I had to have a bigger TV, and that seemed like an all-time great way to get it... I'll grant you, it wasn't truly a BoatAnchor - heck, the cabinet was wood, so the sucker probably would have floated!

At the time I had two young daughters at home, ages 14 and 8... They



were excited about getting a new BIG TV, and so were eager to get the construction done. I assigned tasks to each, like parts placement and trimming leads, soldering, and checking against the wonderfully detailed Heath instructions. Both girls dove in, and took well to gentle guidance, asked thousands of questions, and provided some of the very BEST father-daughter time a Dad could ever ask for.

When we had the monster assembled, it was time for the initial "smoke test" and on to adjustment. No smoke, and the various Heath/Zenith provided alignment patterns came up, and after removing anything metal from near my hands (I was "bitten" once by 2700 volts and thrown through a basement wall - only one layer of sheetrock and studs wider than 16" centers) I gingerly rotated the focus as the kids watched the screen and excitedly reported results. Together WE built that TV, and my kids were super proud of their part in the construction, often telling their friends who came to the house that THEY help build the TV, and smugly smiled when their mother backed up their claims to the disbelievers.

The 14 is now 40 with a civil engineering degree and the mom of two, and the 8 is 34 and still beams with excitement when she recalls building that TV.

Go for it, Roger! You two will have the best time!

73,

--

Jack Hill, W4KH - BoatAnchors Listowner/Archiver  
listown at nanniandjack.com

"Plus ca change, plus c'est la meme chose"

"Il n'y a que les idiots qui ne changent jamais d'idee"

From smithab11 at comcast.net Wed Nov 4 19:06:04 2015

From: smithab11 at comcast.net (B. Smith)

Date: Wed, 4 Nov 2015 19:06:04 -0500

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>

References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>

Message-ID: <563A9D6C.6050000@comcast.net>

Its always a good idea to attempt some sort of measurement of the crystal current on your home brew transmitter or any older equipment. I've built several different light bulb crystal current checkers into FT-243 holders with a crystal socket glued on top with my favorite epoxy 5 minute JB Weld. The "empty" FT-243 holder contains a miniature light bulb such as a 25 Ma bulb 2721141 available at Radio Shack wired in series with one lead of the crystal socket. Check your circuit and watch the glow of the bulb and if that miniature 25 ma bulb glows

bright then don't use your favorite crystal. :-) You can do a bench check on different bulbs to get a idea of the amount of glow vs current.

An old rule of thumb was 30 ma max for most crystal circuits.

Years ago they used a number 49 bulb which is rated at 2 volts and 60 ma. BTW leaving the bulb in the circuit may cause a slight chirp but in some instances softens the keying slightly which may be a good thing.

73

k4che

<http://k4che.com/>

On 11/4/2015 9:57 AM, David Stinson via BoatAnchors wrote:

> I built a single-tube, power pentode crystal oscillator on a wooden  
> board in the style of what a 1930s "poor kid" would have made to match  
> my early 1935 HRO receiver. I call it  
> "Old Fireball." It works well but is very hard on crystals.  
>  
> <http://home.netcom.com/~arc5/OldFireball.jpg>  
> (I was trying a Pi output in this picture)  
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> List members who are kinder to me than I deserve  
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> Must use the "big blank" type crystals or it will bust them every time.  
> And of course, I dropped my 3890 AM net "big blank" and broke it.  
> Arrrrrg! They ain't making big blanks any more.  
>  
> 73 Dave AB5S  
>  
>  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From w4rl at bellsouth.net Wed Nov 4 19:29:48 2015

From: w4rl at bellsouth.net (Robert)

Date: Wed, 4 Nov 2015 18:29:48 -0600

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <563A9D6C.60500000@comcast.net>

References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.60500000@comcast.net>

Message-ID: <563AA2FC.50903@bellsouth.net>

I am really enjoying this thread and seeing the pictures of yall's work.

Amazing what is put together to make or receive RF. Thanks.

Robert W4RL Pensacola

On 11/4/2015 6:06 PM, B. Smith via BoatAnchors wrote:

> Its always a good idea to attempt some sort of measurement of the  
> crystal current on your home brew transmitter or any older equipment.  
> I've built several different light bulb crystal current checkers into  
> FT-243 holders with a crystal socket glued on top with my favorite  
> epoxy 5 minute JB Weld. The "empty" FT-243 holder contains a miniature  
> light bulb such as a 25 Ma bulb 2721141 available at Radio Shack wired  
> in series with one lead of the crystal socket. Check your circuit and  
> watch the glow of the bulb and if that miniature 25 ma bulb glows  
> bright then don't use your favorite crystal. :-) You can do  
> a bench check on different bulbs to get a idea of the amount of glow  
> vs current.

> An old rule of thumb was 30 ma max for most crystal  
> circuits. Years ago they used a number 49 bulb which is rated at 2  
> volts and 60 ma. BTW leaving the bulb in the circuit may cause a  
> slight chirp but in some instances softens the keying slightly which  
> may be a good thing.

> 73

> k4che

> <http://k4che.com/>

>

> On 11/4/2015 9:57 AM, David Stinson via BoatAnchors wrote:

>> I built a single-tube, power pentode crystal oscillator on a wooden  
>> board in the style of what a 1930s "poor kid" would have made to  
>> match my early 1935 HRO receiver. I call it  
>> "Old Fireball." It works well but is very hard on crystals.

>>

>> <http://home.netcom.com/~arc5/OldFireball.jpg>

>> (I was trying a Pi output in this picture)

>>

>> List members who are kinder to me than I deserve

>> provided crystals. I've used it both on CW and Phone. About 35 watts  
>> out.

>> Must use the "big blank" type crystals or it will bust them every time.

>> And of course, I dropped my 3890 AM net "big blank" and broke it.

>> Arrrrrg! They ain't making big blanks any more.

>>

>> 73 Dave AB5S

>>

>>

>>

>> -----

>> BoatAnchors mailing list

>> BoatAnchors at theporch.com

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>> https://minime.theporch.com/mailman/listinfo/boatanchors
>>
>
> -----
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>
```

From rbsingl at ilstu.edu Wed Nov 4 20:11:42 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Thu, 5 Nov 2015 01:11:42 +0000  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <563AA2FC.50903@bellsouth.net>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>

I am also enjoying seeing what other members have been doing. I uploaded a few photos from the build process of my amplifier to Dropbox. If you are not a registered user of dropbox just click on the X on the sign in box and it will take you directly to the photos without the need to register or sign in.

<https://www.dropbox.com/sh/y1le3qg6jajh8zp/AADw6UTV-bXMpB1rPvoy2szga?dl=0>

I designed this amp shortly before I got heavily into vintage radio and it was built to withstand contest duty in any mode and thinking ahead I also wanted it to be able to run the legal limit on AM without pushing it. I used the G3SEK tetrode boards which greatly simplify control circuitry and also provide good protection against those mistakes that can easily occur in the early morning hours late in a contest :) The tetrode boards provide for proper T/R control, delay timer for tube warmup, regulated bias and screen voltage, and protective trip-out when set parameters are exceeded. The blower has a separate timer so that it runs for 3 minutes after the amp is shut down.

The RF deck uses three Svetlana 4CX800 tetrodes in grounded cathode class AB1 grid driven service with the cathode resistors suggested in the Svetlana application note. I used a roller inductor with a vacuum tune capacitor and regular load capacitor for the output network and the input is a passive resistor system. With the resistive input stability is excellent and 30 watts will drive the amp to 1,500 watts output. Since the initial build I moved the blower to an external box to provide a little quieter operation and also to provide a low air resistance filtered intake for the blower but nothing else has been changed. The power supply uses a P. Dahl transformer with 56uf of oil filled capacitors in the filter. I made the main metering deck where it could be placed separately from

the amp for easy viewing if I changed station layout. The cathode resistors also allowed me to add the three small meters stacked vertically on the control panel and these indicate individual cathode current so that I can see at a glance if one of the tubes isn't operating properly.

I also designed in an electronic bias switching circuit but I seldom use it. The tubes are running well under their rated dissipation and in the winter the extra heat in the contest "shack" which is built into the basement of my barn is nice. With a Johnson Desk, BC-610, recently acquired T-368, and a Gates BC-250GY (still awaiting full restoration) in the house I have seldom used the amplifier on AM but it is good for putting out a potent 160 meter AM signal.

Design, parts acquisition, construction, and final testing took a little over two months but I was also pretty busy at the time "publishing and not perishing" at the university. It was a pretty uneventful build process and my MFJ SWR analyzer connected in reverse showed that the calculated and measured inductance and capacitance values were just about exact. Tune-up was smooth with no smoke which is always nice.

Rodger WQ9E

Dr. Rodger B. Singley  
Professor of Marketing

From wlfuqu00 at uky.edu Wed Nov 4 22:29:55 2015  
From: wlfuqu00 at uky.edu (Fuqua, Bill L)  
Date: Thu, 5 Nov 2015 03:29:55 +0000  
Subject: [BoatAnchors] [Boatanchors] Any Builders out There?  
In-Reply-To: <1245227336.2354474.1446667619468.JavaMail.yahoo@mail.yahoo.com>  
References: <506974536.1950770.1446612423042.JavaMail.yahoo@mail.yahoo.com>, <1245227336.2354474.1446667619468.JavaMail.yahoo@mail.yahoo.com>  
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34AF76550@ex10mb02.ad.uky.edu>

I can appreciate the comment about not having the patients to build show and tell projects, you know those that look like they are perfect and came from a factory. I build stuff try get it to to work and on to something else. Can't sit still long.

73

Bill wa4lav

---

From: Boatanchors [boatanchors-bounces at puck.nether.net] on behalf of Ron Barlow via Boatanchors [boatanchors at puck.nether.net]  
Sent: Wednesday, November 04, 2015 3:06 PM

To: Glen Zook; Frank Barnes; qrv at kd4e.com  
Cc: boatanchors at theporch.com; BOATANCHORS  
Subject: Re: [Boatanchors] Any Builders out There?

Hi Wilson, FWIW, I have homebrewed all of my presently used radio gear, rx, tx, antennas, etc. Mostly at VHF and UHF, but some QRP HF "stuff" also, including 20's vintage Hartleys & regen receivers. I do not have the patience, facilities, or ability to construct show-n-tell type equipment, however. My parts sources were almost exclusively hamfest freebies, and my junkbox. My current workshop is an outdoor table, weather permitting (a serious rarity). My post retirement/post mistake/post recession budget is essentially nil. Arthritis and other issues have caused my recent project level to plummet, but not completely vanish. My hb projects are most assuredly not pretty, due to the above mentioned issues/limitations! My budget limitations leave me with no other options, other than the hb route, but I never enjoyed using commercially made stuff, when that option was available. Thus, homebrewing is a win/win scenario, for me.

It is very good indeed, to hear from other hb enthusiasts.

73 & GL de Ron n4gjb

On Tuesday, November 3, 2015 11:47 PM, Glen Zook via Boatanchors <boatanchors at puck.nether.net> wrote:

I have quite a bit of home brew equipment that I have built in the past few years including a single band 160-meter linear amplifier  
[http://nebula.wsimg.com/64c93cac786e7174968c0855eca0b53e?  
AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1](http://nebula.wsimg.com/64c93cac786e7174968c0855eca0b53e?AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1)

a 160-meter transverter  
[http://nebula.wsimg.com/78f8c72f3ed4da3c80cfa84485eb476c?  
AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1](http://nebula.wsimg.com/78f8c72f3ed4da3c80cfa84485eb476c?AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1)

Antenna switches, various VLF and VHF receiving converters, test equipment including attenuators and a digital signal generator (started with one of the Chinese VFOs) that covers 0 kHz to 55 MHz with a well calibrated variable attenuator, patch panels, power supplies, and a fair amount of other items. Also, not completely home brew, but rebuilt a BC-312M that was badly hacked, gutted, etc.

[http://nebula.wsimg.com/4d0f27dd0e881a991f594c3efe68b87e?  
AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1](http://nebula.wsimg.com/4d0f27dd0e881a991f594c3efe68b87e?AccessKeyId=5DDC3F25F0398F58962E&disposition=0&alloworigin=1)

Glen, K9STH  
Website: <http://k9sth.net>

---

Boatanchors mailing list  
Boatanchors at puck.nether.net  
<https://puck.nether.net/mailman/listinfo/boatanchors>

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Boatanchors mailing list  
Boatanchors at puck.nether.net  
<https://puck.nether.net/mailman/listinfo/boatanchors>

From gsantacana at gmail.com Wed Nov 4 22:39:01 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Wed, 4 Nov 2015 23:39:01 -0400  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <39A18536-FE8A-42CA-A814-DDB6DE72867C@gmail.com>

All this building activity reminds me of my first transceiver, a Heathkit HW104. It was my first Heath project and came out well thanks to those wonderful instructions. The HW104 had one problem, low sens above 15M. Later on Heath came up with an improved front end board. Many other Heaths were built after that one. At that time I also made a small two tube super regen radio from a design in Popular Electronics. It had a couple of shortwave bands and used B&W coils. Nowadays I only do mostly restoration work on my BAs and my building is down to regulated power supplies. I had a good friend who used to build excellent amplifiers but he left before I could use him as an Elmer to build my own. Well... Maybe after retirement in a couple of years. This thread has been great.

73s

Guido Santacana KP4FAR

Sent from my iPad

On Nov 4, 2015, at 9:11 PM, "Singley, Rodger via BoatAnchors" <boatanchors at theporch.com> wrote:

> I am also enjoying seeing what other members have been doing. I uploaded a few photos from the build process of my amplifier to Dropbox. If you are not a registered user of dropbox just click on the X on the sign in box and it will take you directly to the photos without the need to register or sign in.

>

> <https://www.dropbox.com/sh/ylle3qg6jajh8zp/AADw6UTV-bXMPb1rPvoy2szga?dl=0>

>

> I designed this amp shortly before I got heavily into vintage radio and it was

built to withstand contest duty in any mode and thinking ahead I also wanted it to be able to run the legal limit on AM without pushing it. I used the G3SEK tetrode boards which greatly simplify control circuitry and also provide good protection against those mistakes that can easily occur in the early morning hours late in a contest :) The tetrode boards provide for proper T/R control, delay timer for tube warmup, regulated bias and screen voltage, and protective trip-out when set parameters are exceeded. The blower has a separate timer so that it runs for 3 minutes after the amp is shut down.

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>

> Rodger WQ9E

>

> Dr. Rodger B. Singley

> Professor of Marketing

>

>

>

>

> -----  
> BoatAnchors mailing list



> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From beckrep at citlink.net Thu Nov 5 02:20:55 2015  
From: beckrep at citlink.net (Paul Beckwith)  
Date: Thu, 05 Nov 2015 00:20:55 -0700  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <d82014349eab504644d4b486700cbf0e@nanniandjack.com>  
References: <d82014349eab504644d4b486700cbf0e@nanniandjack.com>  
Message-ID: <mailman.211.1446708092.237.boatanchors@theporch.com>

Roger, Jack and the crew,

Great thread!

We live in Arizona. Over the summer, our 12-year old granddaughter from New York came out to visit us. She immediately became grandpa's sidekick. Everything I did, she had to do. To make a long story short, she soldered up her own code practice oscillator and taught herself Morse code. What a wonderful experience! She's back in NY now, and we still text using dots & dashes. For next year, I'm thinking about disassembling a Heathkit, giving her the book and parts, and letting her have at it.

73's to all, de Paul K2LMQ

At 01:59 PM 11/4/2015, List Manager via BoatAnchors wrote:

>

>

>Date: Wed, 4 Nov 2015 00:18:50 +0000

>"Singley, Rodger" <rbsingl at ilstu.edu> wrote:

>

> > My 12 year old daughter wants to be included in design and

> building so that will be a fun activity for both of us.

>

> Roger and Gang-

>

>As usual, I am jumping in a tad late, but I thought I'd add a happy note

>for Roger and those of you still with impressionable minds in the house.

From vilgotch at bigpond.net.au Thu Nov 5 03:23:34 2015  
From: vilgotch at bigpond.net.au (Morris Odell)  
Date: Thu, 5 Nov 2015 19:23:34 +1100  
Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <39A18536-FE8A-42CA-A814-DDB6DE72867C@gmail.com>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<39A18536-FE8A-42CA-A814-DDB6DE72867C@gmail.com>  
Message-ID: <003401d117a3\$43700d20\$ca502760\$@bigpond.net.au>

This is indeed a terrific thread!

I love homebrewing and over the years have completed quite a few radio related projects, some of them even qualifying as Boatanchors! The biggest item was a 300 watt HF linear using a TB3/570 that I used for several years before swapping it to another ham in part payment for a FRR59A receiver - a true boatanchor and quite rare down here. I've restored and used a lot of BA receivers including an AR88, SX28, B40, Racal RA17,R390A, R388, Marconi CR150 - the list goes on. The entertainment FM Rx in my shack is a Hallicrafters S27. The most satisfying one I think was an early HRO that had been so "improved" by a previous owner that the only option was disassembly down to a blank chassis and complete rebuild. I had to make the doghouse power supply from scratch.

Lots of non-radio stuff too using BA technology including a Sperry radar indicator converted to a PPI display clock and another nixie clock with a vacuum tube timebase and switching by uniselectors.

I live in the RF armpit of a big city - so much QRM and QRN that HF radio is impossible. My VHF projects have used technology not mentionable here :-)

73 de Morris VK3DOC

From 4cx250b at miamioh.edu Thu Nov 5 07:51:54 2015  
From: 4cx250b at miamioh.edu (Jim Garland)  
Date: Thu, 5 Nov 2015 05:51:54 -0700  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <0bca01d117c8\$c037de80\$40a79b80\$@miamioh.edu>

Hi Rodger and the Group,  
By coincidence, I've just completed a homebrew amp that also uses three

GU74B (4CX800) tetrodes. It took me three years to design, construct and debug the amp. The power supply is in a separate enclosure and can power three independent RF decks. It uses a Peter Dahl xfmr and produces 2700V @ 2 Amps (the design was written up last year in QEX.) The RF deck is for 160m and 80m only, and uses vacuum relays instead of a bandswitch. The screen grid bias, control grid bias, switching, and QSK circuitry are my own design. (The QSK design was in a recent QST article). I run the tubes at 325V (adjustable) on the screens, with a tiered control grid bias for CW and SSB.

The main reason it took so long to build was because I fabricated my own enclosures, (I'm pleased with the final result, but I'll never do that again!), and also used my own circuit design (on five printed circuit boards) for the screen grid regulator, control grid regulator, front panel switching and metering, QSK, and HV monitoring). The lettering on the front and rear panels are engraved, and the enclosures were powder-coated (by a local company). Here's a Shutterfly link to photos, but I'm not sure the link works. If you can't get it to work, I'll be happy to email anyone the photos and circuit diagram.

<https://www.shutterfly.com/action/welcome?sid=0CbuWjJqyZMWcj&emid=shareprintviewer&linkid=link>

73,  
Jim W8ZR

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf Of Singley,

> Rodger via BoatAnchors

> Sent: Wednesday, November 04, 2015 6:12 PM

> To: Old Tube Radios (boatanchors at theporch.com)

> Subject: Re: [BoatAnchors] Any Builders out There?

>

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> <https://www.dropbox.com/sh/ylle3qg6jajh8zp/AADw6UTV-bXMpB1rPvoy2szga?dl=0>

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> Dr. Rodger B. Singley  
> Professor of Marketing  
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> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Thu Nov 5 08:06:10 2015  
From: arc5 at ix.netcom.com (=?utf-8?B?YXJjNUBpeC5uZXRjb20uY29t?=  
Date: Thu, 5 Nov 2015 13:06:10 GMT  
Subject: [BoatAnchors] Any Builders out There?  
Message-ID: <000f4242.654b664133747b96@ix.netcom.com>

Won't let me look at the photos without signing up.  
Sent from my ain't-so-smartphone.

From oldradio at comcast.net Thu Nov 5 08:41:39 2015  
From: oldradio at comcast.net (oldradio at comcast.net)  
Date: Thu, 5 Nov 2015 13:41:39 +0000 (UTC)  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>

<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
Message-ID: <1545786299.5790068.1446730899588.JavaMail.zimbra@comcast.net>

Hi Jim,

At last a successor to the StationProII, The "StationBigBoy3", an amp to end all amps!

Looking forward to the introduction of your new kit! :- ) :- ) [grin]

Jim, that's a great project. Pictures came out real good.

73, John

----- Original Message -----

From: "Jim Garland via BoatAnchors" <boatanchors at theporch.com>  
To: "Rodger" 'Singley' <rbsingl at ilstu.edu>, boatanchors at theporch.com  
Sent: Thursday, November 5, 2015 7:51:54 AM  
Subject: Re: [BoatAnchors] Any Builders out There?

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<https://www.shutterfly.com/action/welcome?sid=0CbuWjJqyZMWcj&emid=shareprintviewer&linkid=link>

73,  
Jim W8ZR

From w9ac at arrl.net Thu Nov 5 09:01:42 2015  
From: w9ac at arrl.net (Paul Christensen)  
Date: Thu, 5 Nov 2015 09:01:42 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
Message-ID: <000001d117d2\$815e7fc0\$841b7f40\$arrl.net>

> Design, parts acquisition, construction, and final testing took a little over two months but I was also pretty busy at the time "publishing and not perishing" at the university.

Roger,

Impressive result from only two months of work! I'm nearing completion of a quasi-homebrew amp. The amp is built on the carcass of an old Alpha 77D "beater." It's a cheated effort since I've recycled the Pi-L network, input network and some of the power supply. Of course, the chassis is there too. But, the control circuitry is a complete re-design using my S-QSK boards. Processing is shared and distributed between two Arduino microcontrollers, programmed in C++. The front panel is customized but likely, you'll see some resemblance to the 77D.

The panel meters were purchased new from Hoyt Electrical and were the most expensive piece of the project. Of course, they're back-lighted with LEDs. My initial goal was to find original Wester-Electric 180-degree meters. However, used WE meters are also expensive and would require customized meter faces. So, I elected to use 250-degree meters that look quite close to the WE type but also take on the appearance of a tachometer. The meter scales were designed by Hoyt's graphic arts department.

The pushbutton switches are of the type used in broadcast video switching gear. Each switch contains an RGB LED with the color referencing a unique switched state. Control of color is generally accomplished with a change of PWM duty-cycle. Since I was running low on microcontroller processing power, I ended up using a small pot to obtain yellow from the Red-Green-Blue diodes. What took me by complete surprise is that yellow is a very narrow slice of current change between red and green. A tiny change in current means a big change in color between red, orange, yellow and green. You can see the pot in one of the photos in the link below.

Photos of the amp and a discussion of the S-QSK board can be seen on my QRZ.com page: <https://www.qrz.com/db/w9ac>

Paul, W9AC

From charlesmorris800 at centurytel.net Thu Nov 5 09:53:39 2015  
From: charlesmorris800 at centurytel.net (Charles)  
Date: Thu, 5 Nov 2015 08:53:39 -0600  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <mailman.227.1446728338.237.boatanchors@theporch.com>  
References: <mailman.227.1446728338.237.boatanchors@theporch.com>  
Message-ID: <272DF5AEF8114D5D964B582C931F3D5C@CharlesHPLaptop>

I've always liked "ARC-5" Command Set radios, so built a screen modulator and power supply. Also an amp with four 4-125A's in parallel. Definitely a boat anchor there :)

The amp ended up costing me more than buying one, but I always say that any fool can write a check...

<http://s1181.photobucket.com/user/DrCharlesMorris/library/ARC-5>

-Charles

From jay at kk5im.com Thu Nov 5 09:43:30 2015  
From: jay at kk5im.com (Jay H. Miller)  
Date: Thu, 5 Nov 2015 09:43:30 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.60500000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
Message-ID: <a0624083ed2611a4a088a@[192.168.0.118]>

Very nice work Jim!

Shutterfly is the best way to share pixs.  
Unfortunately one does have to "sign up" to view them... in most cases. There USED to be a way to send a link where non Shutterfly members did not have to sign up but that option appears to have



disappeared. And yes, you will get a slew of SPAM from Shutterfly but just create a spam filter and enjoy the pixs. Plus you can order cheap prints if you want to.

I am working on a new 160 meter AM plate modulated transmitter using a Millen exciter, crystal controlled, driving a single-band final with a pair of 813s. The modulator and speech amplifier came from a silent key estate. Uses a pair of 100THs @ 300 watts with heavy UTC commercial grade iron. I home brewed a duplicate of the Millen exciter power supply.

\*\*\*\*\* jay at kk5im.com \*\*\*\*\*

Jay H. Miller, KK5IM Crawford, Texas

NRA \* ARRL \* DXCC \* S.A.S.S. #34,692

32? AASR \* MVPA #25,180

Website: <http://www.kk5im.com>

\*\*\*\*\* Proud to be 100% Macintosh since 1984! \*\*\*\*\*

From w8au at sssnet.com Thu Nov 5 11:55:53 2015

From: w8au at sssnet.com (w8au at sssnet.com)

Date: Thu, 05 Nov 2015 11:55:53 -0500

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <mailman.211.1446708092.237.boatanchors@theporch.com>

References: <d82014349eab504644d4b486700cbf0e@nanniandjack.com>

<mailman.211.1446708092.237.boatanchors@theporch.com>

Message-ID: <mailman.240.1446742572.237.boatanchors@theporch.com>

At 02:20 AM 11/5/2015, Paul Beckwith via BoatAnchors wrote:

>We live in Arizona. Over the summer, our 12-year old granddaughter  
>from New York came out to visit us. She immediately became  
>grandpa's sidekick. Everything I did, she had to do. To make a  
>long story short, she soldered up her own code practice oscillator  
>and taught herself Morse code. What a wonderful experience! She's  
>back in NY now, and we still text using dots & dashes. For next  
>year, I'm thinking about disassembling a Heathkit, giving her the  
>book and parts, and letting her have at it.

Paul: Was great to hear you checking into the Old Military Radio Net (CW) Sunday night.

Keep that ART-13 humming and hopefully the winter months will allow decent propagation on 80M from AZ to the East Coast.

Perry w8au

From kb8tad at gmail.com Thu Nov 5 12:26:07 2015  
From: kb8tad at gmail.com (Rich Post)  
Date: Thu, 5 Nov 2015 12:26:07 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <mailman.240.1446742572.237.boatanchors@theporch.com>  
References: <d82014349eab504644d4b486700cbf0e@nanniandjack.com>  
<mailman.211.1446708092.237.boatanchors@theporch.com>  
<mailman.240.1446742572.237.boatanchors@theporch.com>  
Message-ID: <CAEJr0FtZOnQHwgu-E7tUBh=zR57fsSkDwZX-geghJa2gY6XEeg@mail.gmail.com>

After about 30 seconds of ignoring the nag sign-up screen, was able to click on the grayed out pic and it let me in. Beautiful work as usual Jim!

From garygarlic at earthlink.net Thu Nov 5 12:58:28 2015  
From: garygarlic at earthlink.net (Gary Woods)  
Date: Thu, 05 Nov 2015 12:58:28 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
Message-ID: <0d5n3bdqnb1cb8o2ud9454b9mr2214vueo@4ax.com>

On Tue, 3 Nov 2015 14:04:14 -0500, you wrote:  
>So who's out there with HB gear, TX or RX?

This is more than repurposing than full-blown homebrew. Somebody gave me a base CB linear that had the MRF-455s turn back to sand. Stuck on the shelf, since with no filtering, it couldn't be anywhere near legal. Then, I saw the nifty 2-meter converter boards on E-Pay from Ukraine. Says, "Self, I've got a box with switches, power supply, heatsink...." Discarded the original amp board and figured out how to mount the transverter board on the heatsink, after cutting a suitable window in the back of the case. The brute-force power supply had enough headroom to run a 7812 regulator with outboard boost transistor straight of the application notes, and a "test" output of the transverter board (It uses a couple of header plugs for gazintas/gazoutas) provided rx mixer out with plenty of level through a blocking cap. The box sprouted extra BNCs for RX ant, 1mw drive, and an RCA for PTT.\* Presto! 10 watts on 2 meters. Stability is excellent (nobody bitches) and freq accuracy is less than a KHz, which is converted in the IF rig.

>Who uses 4-125s, 813s, 810s, 807s, 866s, 814s, 6AG7s, 6L6s, or V-70s?  
Next project is to recreate my old 6AG7-807.

>Who's afraid of their power supply?  
<\Me. Well, at least respectful.

+ -

>Any receiver builders (my weak point)?

Not me, unless you consider the BC-454 I converted years ago.

\*The shack's PTT is all wired with RCA connectors, through a switch box that enables the right things, to make it idiot resistant.

--

Gary Woods AKA K2AHC- PGP key on request, or at [home.earthlink.net/~garygarlic](http://home.earthlink.net/~garygarlic)  
Zone 5/4 in upstate New York, 1420' elevation. NY WO G

From jgillespie at porchlight.ca Fri Nov 6 14:35:15 2015

From: jgillespie at porchlight.ca (J Gillespie)

Date: Fri, 6 Nov 2015 14:35:15 -0500

Subject: [BoatAnchors] obscure radio problem

Message-ID: <05F84D74F5504FE2B7DC6F664F2918A7@xpuser716b2b38>

Hello boatanchor collectors

I am just starting the restoration of an old radio for a silent keys family. The radio is a 1937 Rogers Majestic dual bander. I've come across an unusual problem I've never seen before after restoring radios for nearly fifty years.

Before getting into any set too far, I like to check the continuity of the various coils, IF transformers, and other transformers. Usually liking to partially play any set before getting committed too far. Well... mice had taken up residence in this particular radio, enjoying a meal of the antenna coil. I was able to remove the coil, unwind the damaged turns and make repairs. That coil out of the way, I checked the next coil down the line. The 6K7 RF tube plate is fed B+ through two primary coil windings. Measuring zero resistance across these two primary windings, I was about to give up on the radio. I wasn't able to spot any damage to the coils, anywhere. Then a thought occurred to me... try passing B+ through them and see what happens. 200volts applied at the single B+ point and surprise surprise I'm reading 180volts at the plate at nearly zero ma. I thought maybe it was just oxidized solder connections and reflowed the terminals at the coil. Still reading zero ohms, I tried several different ohm meters, just in case a lead was damaged etc.

Never seen this before !! Any of you guys ever seen anything like this before or have any bright ideas ? How can no resistance, open coils pass voltage ?? There is no other power to the radio, and there is no other voltage pathway, just the B+, the plate and these two primary windings.... Puzzled ! John

From arc5 at ix.netcom.com Fri Nov 6 14:44:24 2015  
From: arc5 at ix.netcom.com (=?utf-8?B?YXJjNUBpeC5uZXRjb20uY29t?=  
Date: Fri, 6 Nov 2015 19:44:24 GMT  
Subject: [BoatAnchors] obscure radio problem  
Message-ID: <000f4242.23071cd4055e8939@ix.netcom.com>

Guess:Capacitor across the winding, possibly built into the base of the coil  
form, shorted from silver migration.  
Sent from my ain't-so-smartphone.

From jgillespie at porchlight.ca Fri Nov 6 15:13:11 2015  
From: jgillespie at porchlight.ca (J Gillespie)  
Date: Fri, 6 Nov 2015 15:13:11 -0500  
Subject: [BoatAnchors] Correction: Obscure radio problem  
Message-ID: <AE18853AA9E24175AF607C28B3501725@xpuser716b2b38>

Sorry guys.... as Nick correctly pointed out, I am reading infinity on both  
primary windings not zero ohms. Both windings appear to have open windings from  
ohm meter readings, yet pass B+. Still puzzled !! John

From gumbear at pacbell.net Fri Nov 6 15:23:17 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Fri, 6 Nov 2015 12:23:17 -0800  
Subject: [BoatAnchors] obscure radio problem  
In-Reply-To: <05F84D74F5504FE2B7DC6F664F2918A7@xpuser716b2b38>  
References: <05F84D74F5504FE2B7DC6F664F2918A7@xpuser716b2b38>  
Message-ID: <C5660F66F8944CC7AFA8F4E9D6B85BBF@KB6NAX>

> .....Never seen this before !! Any of you guys ever seen anything  
> like this  
before or have any bright ideas ? How can no resistance, open coils pass  
voltage ?? There is no other power to the radio, and there is no other  
voltage pathway, just the B+, the plate and these two primary windings....  
Puzzled ! ...

John, although not as common as the maladies of leaky capacitors and drifted  
resistors open coils are not an unusual fault (BTW, I think you meant to say  
the ohmmeter was indicating \*infinite\* ohms). Besides being on the mouse  
menu coils most often go open at one of the terminals due to corrosion

around the solder joint. The exposed copper of the winding wire is eaten through by the combination of acidic or alkaline dirt and moisture. You can usually spot the problem with a high powered magnifier. The reason you are seeing B+ voltage on the other side is because the corrosion debris is conductive being essentially a salt solution but too high of a resistance for your ohmmeter to see. Other causes of winding breakage are distortion of the coil form causing strain on the wire, a current surge from a defective tube, a shorted B+ blocking capacitor, line voltage leakage through an antenna coil, a lightning strike, or tool damage to the wire which eventually fails from the minute temperature induced expansion and contraction of the coil winding. Repairs can be difficult particularly for multi layer windings of low frequency coils. But don't give up hope. Some repairs have been reported that such windings are unwound by hand to the break, spliced, and then carefully rewound by hand. The coil doesn't look so pretty being partially scramble wound but as long as the inductance doesn't stray too far the coil will work like it originally did. Let us know if you succeed in making repairs.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From rbsingl at ilstu.edu Fri Nov 6 15:38:33 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Fri, 6 Nov 2015 20:38:33 +0000  
Subject: [BoatAnchors] obscure radio problem  
In-Reply-To: <C5660F66F8944CC7AFA8F4E9D6B85BBF@KB6NAX>  
References: <05F84D74F5504FE2B7DC6F664F2918A7@xpuser716b2b38>  
<C5660F66F8944CC7AFA8F4E9D6B85BBF@KB6NAX>  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD3230077E9@ISUEMBX02.ad.ilstu.edu>

I agree with Arden that conductive residue, likely the result of mouse activity, is responsible for seeing voltage present when the circuit is only loaded by the very high input resistance of your volt meter.

A couple of years ago I experienced an odd issue with my 2006 GMC diesel pickup. I noticed one day that the check engine light was on before I had even put the key in the ignition switch but it started and ran normally however when I tried to shut the engine off it kept running until I pulled the ECM fuse. This behavior was very random and most of the time the pickup behaved normally with no

illuminated CEL and the only stored trouble code was loss of communications with the transmission control module. After spending some serious time with the 5 volume factory service manuals, which make a radio service manual look like a child's comic book, I located the problem. GM uses a box called the UBEC or Underhood Bussed Electrical Center which has fuses and relays on the top level, several very large connections to wiring harnesses on the bottom, and sandwiched in between is a group of bare copper wires contained in a board laid out like a maze providing the needed interconnections and looking very much like the bus wires in a 1920s radio. A mouse had urinated on the top level and it ran down creating corrosive residue between a wire in the constant 12 volt bus and another that should only have voltage with the ignition switched on. The key was when it was humid enough the residue was sufficiently conductive to create problems thus the seemingly random behavior. I watched this behavior with a couple of meters and with artificially created humidity once the batteries were connected I could see the voltage slowly rise on the switched 12 volt bus (which shouldn't have any voltage) and once it reached 9 volts the ECM turned on the relay powering this bus allowing it to rise to full voltage. It took a lot of time to figure out what was going on but once I identified the problem it took 15 minutes to replace the UBEC with a new one. After disassembling the old UBEC I didn't trust my ability to get all of the many bus wires properly contained in their guides and I have to say that part of the component looks like it was built in a very underdeveloped country.

Never underestimate the power of a mouse!

Rodger WQ9E

Dr. Rodger B. Singley  
Professor of Marketing

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf

> Of Arden Allen via BoatAnchors

@theporch.com>

> Subject: Re: [BoatAnchors] obscure radio problem

From jim.isbell at gmail.com Fri Nov 6 16:22:25 2015

From: jim.isbell at gmail.com (Jim Isbell, W5JAI)

Date: Fri, 6 Nov 2015 15:22:25 -0600

Subject: [BoatAnchors] cleaning the garage

Message-ID: <CAB+LbZBW3Qk=FL84FryU4X2Vg1x17YoxEe0iic01q=r9+kndeQ@mail.gmail.com>

I have a garage full of old tube type test equipment, transmitters, receivers, antiques computers back to the PET, Sinclair, TRS-80 and on and on. A couple of multi killowatt power supplies for a 5 kw or larger Linear....weigh maybe 500 pounds or maybe more..... It is going. NOT

shipped, picked up.

I dont need it anymore. I wont start the computer museum I once thought I would. I will never restore the TB-50s. The antique antenna tuners dont do the job that a solid state unit would. I can buy new if I want it so why fill up my garage.

From jim.isbell at gmail.com Fri Nov 6 20:16:39 2015  
From: jim.isbell at gmail.com (Jim Isbell, W5JAI)  
Date: Fri, 6 Nov 2015 19:16:39 -0600  
Subject: [BoatAnchors] Garage cleaning  
Message-ID: <CAB+LbZDhKQDQmKAvYv=6w-7KTEHWQ0y4V0ifMiWMS+qB0=CQ3w@mail.gmail.com>

OK, once more with passion,

North side of corpus christi bay

Wont be here by thanksgiving. Probably gone in this week.

Its FREE. wont last.

\*Boat stuff include\*s three inflatable dinghys, outboards, anchors, radar set, fuel tanks, fuel bladders, radios, pumps, hardware, stainless steel water heater (engine exhaust driven and 110vac)

\*HAM stuff includes\* lots of power supplies, two huge 5Kw linear amp power supplies (several hundred pounds each), lots of dynamotors, transceivers,

From universal\_comm at reagan.com Fri Nov 6 20:32:38 2015  
From: universal\_comm at reagan.com (Raymond Cote)  
Date: Fri, 6 Nov 2015 15:32:38 -1000  
Subject: [BoatAnchors] Garage cleaning  
In-Reply-To: <CAB+LbZDhKQDQmKAvYv=6w-7KTEHWQ0y4V0ifMiWMS+qB0=CQ3w@mail.gmail.com>  
References: <CAB+LbZDhKQDQmKAvYv=6w-7KTEHWQ0y4V0ifMiWMS+qB0=CQ3w@mail.gmail.com>  
Message-ID: <7AD75D24-BA1B-43B6-89EE-9871E7CBC7FF@reagan.com>

Wow!!! Someone or three go look over this stash of stuff. It's worth grabbing some.

Sent from my iPhone wireless thingy

> On Nov 6, 2015, at 3:16 PM, Jim Isbell, W5JAI via BoatAnchors <boatanchors at theporch.com> wrote:

>

> OK, once more with passion,

>

> North side of corpus christi bay  
>  
> Wont be here by thanksgiving. Probably gone in this week.  
>  
> Its FREE. wont last.  
>  
> \*Boat stuff include\*s three inflatable dinghys, outboards, anchors, radar  
> set, fuel tanks, fuel bladders, radios, pumps, hardware, stainless steel  
> water heater (engine exhaust driven and 110vac)  
>  
> \*HAM stuff includes\* lots of power supplies, two huge 5Kw linear amp power  
> supplies (several hundred pounds each), lots of dynamotors, tranceivers,  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From dave at horsfall.org Sat Nov 7 00:03:12 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Sat, 7 Nov 2015 16:03:12 +1100 (EST)  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD32300743F@ISUEMBX02.ad.ilstu.edu>  
References: <0DEBF1C8D8437248BE53CD4213B89BD32300732C@ISUEMBX02.ad.ilstu.edu>  
<alpine.BSF.2.11.1511041555490.97460@aneurin.horsfall.org>  
<0DEBF1C8D8437248BE53CD4213B89BD32300743F@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <alpine.BSF.2.11.1511071510300.40120@aneurin.horsfall.org>

On Wed, 4 Nov 2015, Singley, Rodger wrote:

> You should share your long story about your father with the list; I am  
> sure we will find it interesting!

Not much to say, really... I was born at a very early age of course, of Air Force parents. Dad in the RAF, Mum in the WAAF (this was the Cold War). I got to know a lot of RAF bases, and their planes (another long story there, involving me summarising the maintenance manual for the Anson Argosy as a school project, nearly getting Dad court-martialled in the process).

Anyway...

My bed was next to this massive steam-radio (and I say that with affection), and I found out that if I touched the top cap of this glass thing, it would make a nice buzzing sound (in hindsight, it was just as well that it was the grid, and not the plate!).

I got the idea of being able to see if I'd left it switched on, so with my



limited knowledge of electronics I spliced a neon lamp into the mains lead, all nicely insulated with sticky-tape.

Dad found it, and went berserk.

After that episode, he gave me a little test, along the lines of "What does the first 6 mean in 6AU6?" "The filament voltage of 6.3v!" How many grids does it have?" "Three, including the suppressor!"

I then built my own crystal sets, selling them to my school-chums.

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From wb1cmg at gmail.com Sat Nov 7 20:50:51 2015  
From: wb1cmg at gmail.com (David Upton)  
Date: Sat, 7 Nov 2015 20:50:51 -0500  
Subject: [BoatAnchors] Drake 1-A Knobs  
Message-ID: <CAFHJE1CpGoA9dH7NfXCBq2WY-v94mwTDub+6URwtRDXBPE5DEw@mail.gmail.com>

Looking for the following knobs for a Drake 1-A receiver or specs for same: RF Gain, AF Gain, and Bandswitch. Thanks.

David, WB1CMG  
Mont Vernon, NH 03057

From gumbear at pacbell.net Sat Nov 7 21:19:45 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 7 Nov 2015 18:19:45 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
Message-ID: <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>

I'm currently building something although it's not radio related. It's a patch panel box with lots of connectors and switches with wires running to and fro. One thing about doing the wiring that gripes me is the use of masking tape to secure wires as the wiring proceeds in order to get the lengths correct for eventually lacing them into neat harnesses. The tape I'm using is 3M's Tartan brand which is about as crappy a product there is for electronics projects. Pulling it off the roll the tape often splits and then what I do get coils up and sticks to itself before I can tape a wire in

place. I need three hands to keep from testing my anger management skills, which ain't great to begin with. So I'm asking for recommendations for a fuss free brand of masking tape. Any good stuff out there?

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From k1lky68 at gmail.com Sat Nov 7 21:49:40 2015  
From: k1lky68 at gmail.com (Roy Morgan)  
Date: Sat, 7 Nov 2015 21:49:40 -0500  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
Message-ID: <7AB646B8-04C7-4BFB-A451-B2E32377439B@gmail.com>

On Nov 7, 2015, at 9:19 PM, Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

> ...The tape I'm using is 3M's Tartan brand... asking for recommendations for a fuss free brand of masking tape. Any good stuff out there?

Blue Painters Tape. NOT the off brand. Get the good stuff (is it made by 3M?). Comes in various widths, maybe half, one, one and a half and two inch wide.

There is similar tape used in the electronics industry which is white and has a smooth surface as opposed to the blue tapes slightly rough surface, but I don't know what it's called.

Another option is to use the green plastic covered wire used by florists. for some the wire is in the middle of a flat strip of plastic like you find on a loaf of bread twist tie. Look in the garden section of your home store. Some times comes on a cardboard backing/package that has a little cutter built in.

Roy

Roy Morgan  
k1lky68 at gmail.com  
K1LK Y Since 1958

From hurstjsj at gmail.com Sat Nov 7 23:11:59 2015  
From: hurstjsj at gmail.com (.)  
Date: Sat, 7 Nov 2015 20:11:59 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
<563A9D6C.6050000@comcast.net> <563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
Message-ID: <CAHaTdntpQamkBwwENuoxG3gj76P\_6Yp1tb4zRpEhh+76gvyTWw@mail.gmail.com>

You might try heating up the roll of tape in your microwave oven. It helps to (temporarily) prevent the splitting as you unroll the tape. The masking tape I've used seems to have short shelf,

John, KU6X

On Sat, Nov 7, 2015 at 6:19 PM, Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

> I'm currently building something although it's not radio related. It's a  
> patch panel box with lots of connectors and switches with wires running to  
> and fro. One thing about doing the wiring that gripes me is the use of  
> masking tape to secure wires as the wiring proceeds in order to get the  
> lengths correct for eventually lacing them into neat harnesses. The tape  
> I'm using is 3M's Tartan brand which is about as crappy a product there is  
> for electronics projects. Pulling it off the roll the tape often splits  
> and then what I do get coils up and sticks to itself before I can tape a  
> wire in place. I need three hands to keep from testing my anger management  
> skills, which ain't great to begin with. So I'm asking for recommendations  
> for a fuss free brand of masking tape. Any good stuff out there?  
>  
> Arden Allen  
> KB6NAX  
>  
> He who is cruel to animals becomes  
> hard also in his dealings with men.

> We can judge the heart of a man by  
> his treatment of animals.  
> ?Immanuel Kant  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From jim.isbell at gmail.com Sat Nov 7 23:18:17 2015  
From: jim.isbell at gmail.com (Jim Isbell, W5JAI)  
Date: Sat, 7 Nov 2015 22:18:17 -0600  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <CAHaTdntpQamkBwwENuoxG3gj76P\_6Yp1tb4zRpEhh+76gvyTWw@mail.gmail.com>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
<563A9D6C.6050000@comcast.net> <563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
<CAHaTdntpQamkBwwENuoxG3gj76P\_6Yp1tb4zRpEhh+76gvyTWw@mail.gmail.com>  
Message-ID: <CAB+LbZBdPW-RERQbOTJ1bttoxhpkLFT\_WyA60\_-3egR04\_sDtpA@mail.gmail.com>

gee, masking tape that is designed for masking a paint job is "crappy" for  
doing electronic wiring.....wonder why..????

On Sat, Nov 7, 2015 at 10:11 PM, . via BoatAnchors <boatanchors at theporch.com>  
> wrote:

> You might try heating up the roll of tape in your microwave oven. It helps  
> to (temporarily) prevent the splitting as you unroll the tape.  
> The masking tape I've used seems to have short shelf,  
>  
> John, KU6X  
>  
>  
> On Sat, Nov 7, 2015 at 6:19 PM, Arden Allen via BoatAnchors <  
> boatanchors at theporch.com> wrote:  
>  
> > I'm currently building something although it's not radio related. It's a  
> > patch panel box with lots of connectors and switches with wires running  
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> > lengths correct for eventually lacing them into neat harnesses. The tape  
> > I'm using is 3M's Tartan brand which is about as crappy a product there  
> > is

> > for electronics projects. Pulling it off the roll the tape often splits  
> > and then what I do get coils up and sticks to itself before I can tape a  
> > wire in place. I need three hands to keep from testing my anger  
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> recommendations  
> > for a fuss free brand of masking tape. Any good stuff out there?  
> >  
> > Arden Allen  
> > KB6NAX  
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> > He who is cruel to animals becomes  
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> > We can judge the heart of a man by  
> > his treatment of animals.  
> > ?Immanuel Kant  
> > -----  
> > BoatAnchors mailing list  
> > BoatAnchors at theporch.com  
> > <https://minime.theporch.com/mailman/listinfo/boatanchors>  
> >  
> > -----  
> > BoatAnchors mailing list  
> > BoatAnchors at theporch.com  
> > <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From 4cx250b at miamioh.edu Sat Nov 7 23:28:32 2015  
From: 4cx250b at miamioh.edu (MU 4CX250B)  
Date: Sat, 7 Nov 2015 21:28:32 -0700  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
<563A9D6C.60500000@comcast.net> <563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
Message-ID: <-2447974383018817811@unknownmsgid>

I use Chinese ty-wrap clones to loosely bundle wires, and then cut and  
toss them when it's time to neaten the bundle. You can get cheap packs  
of a hundred and five hundred at Home Depot and Lowes. The authentic  
good ones, pricier of course, are at Mouser and Digikey.

73,

Jim w8zr

Sent from my iPhone

> On Nov 7, 2015, at 7:21 PM, Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

>

> I'm currently building something although it's not radio related. It's a patch panel box with lots of connectors and switches with wires running to and fro. One thing about doing the wiring that gripes me is the use of masking tape to secure wires as the wiring proceeds in order to get the lengths correct for eventually lacing them into neat harnesses. The tape I'm using is 3M's Tartan brand which is about as crappy a product there is for electronics projects. Pulling it off the roll the tape often splits and then what I do get coils up and sticks to itself before I can tape a wire in place. I need three hands to keep from testing my anger management skills, which ain't great to begin with. So I'm asking for recommendations for a fuss free brand of masking tape. Any good stuff out there?

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> Arden Allen

> KB6NAX

>

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> ?Immanuel Kant

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From jim.isbell at gmail.com Sat Nov 7 23:44:11 2015

From: jim.isbell at gmail.com (Jim Isbell, W5JAI)

Date: Sat, 7 Nov 2015 22:44:11 -0600

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <CAB+LbZBdPW-RERQbOTJ1bttoxhpkLFT\_WyA60\_-3egR04\_sDtpA@mail.gmail.com>

References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>

<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>

<563A9D6C.6050000@comcast.net> <563AA2FC.50903@bellsouth.net>

<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>

<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>

<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>

<CAHaTdntPQamkBwwENUoxG3gj76P\_6Yp1tb4zRpEhh+76gvyTWw@mail.gmail.com>

<CAB+LbZBdPW-RERQbOTJ1bttoxhpkLFT\_WyA60\_-3egR04\_sDtpA@mail.gmail.com>

Message-ID: <CAB+LbZBeMXcrF2qMQQPvFYGTeHpi1YNdytEfTudnLRjg=8YWXg@mail.gmail.com>

Garage cleaning. Two 5kw linear amp power supplies free. Two linear amps one with a pair of 4-1000s and one with a single 4-1000 for sale or trade for a single Collins linear amp. The free power supplies were built for the two Amps.

this is a pick up only offer.

Also lots of dynamotors and power supplies for free.

Almost every personal computer since the early 60s...enough for a museum.....free but must take all.

Lots of boat stuff including \*boat anchors\*, stainless water heater, pumps, fuel tanks and bladders and three inflatables.

All pickup only in South Texas.

On Sat, Nov 7, 2015 at 10:18 PM, Jim Isbell, W5JAI <jim.isbell at gmail.com> wrote:

> gee, masking tape that is designed for masking a paint job is "crappy" for  
> doing electronic wiring.....wonder why..????

>

> On Sat, Nov 7, 2015 at 10:11 PM, . via BoatAnchors <  
> boatanchors at theporch.com> wrote:

>

>> You might try heating up the roll of tape in your microwave oven. It helps  
>> to (temporarily) prevent the splitting as you unroll the tape.

>> The masking tape I've used seems to have short shelf,

>>

>> John, KU6X

>>

>>

>> On Sat, Nov 7, 2015 at 6:19 PM, Arden Allen via BoatAnchors <  
>> boatanchors at theporch.com> wrote:

>>

>> > I'm currently building something although it's not radio related. It's  
>> a

>> > patch panel box with lots of connectors and switches with wires running  
>> to

>> > and fro. One thing about doing the wiring that gripes me is the use of  
>> > masking tape to secure wires as the wiring proceeds in order to get the  
>> > lengths correct for eventually lacing them into neat harnesses. The  
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>> > I'm using is 3M's Tartan brand which is about as crappy a product there  
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>> > for electronics projects. Pulling it off the roll the tape often splits  
>> > and then what I do get coils up and sticks to itself before I can tape a  
>> > wire in place. I need three hands to keep from testing my anger  
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>> > skills, which ain't great to begin with. So I'm asking for  
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```

>> > for a fuss free brand of masking tape. Any good stuff out there?
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>> > BoatAnchors mailing list
>> > BoatAnchors at theporch.com
>> > https://minime.theporch.com/mailman/listinfo/boatanchors
>> >
>
>

```

From kd5byb at kd5byb.net Sun Nov 8 09:13:28 2015  
 From: kd5byb at kd5byb.net (Ben Hall)  
 Date: Sun, 8 Nov 2015 08:13:28 -0600  
 Subject: [BoatAnchors] Tapes, was Re: Any Builders out There?  
 In-Reply-To: <7AB646B8-04C7-4BFB-A451-B2E32377439B@gmail.com>  
 References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
           <65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.60500000@comcast.net>  
           <563AA2FC.50903@bellsouth.net>  
           <0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
           <0bca01d117c8\$c037de80\$40a79b80\$miamioh.edu>  
           <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
           <7AB646B8-04C7-4BFB-A451-B2E32377439B@gmail.com>  
 Message-ID: <563F5888.9080103@kd5byb.net>

On 11/7/2015 8:49 PM, Roy Morgan via BoatAnchors wrote:  
 > Blue Painters Tape. NOT the off brand. Get the good stuff (is it  
 > made by 3M?). Comes in various widths, maybe half, one, one and a  
 > half and two inch wide.

Another painter's tape called "Frog Tape" works well too.

> There is similar tape used in the electronics industry which is white  
 > and has a smooth surface as opposed to the blue tapes slightly rough  
 > surface, but I don't know what it's called.



At my workplace where we do custom PCB design/prototyping, we use Shercon brand PC90 blue polyester "high temperature film tape" for just about everything we need to hold together, but don't want residue when we remove it.

We still lace harnesses; I'll have to ask our tech who does it how he holds things together for assembly.

I'm not familiar with the white stuff, and sounds like your blue tape and my blue tape are different, as the one I'm familiar with is totally smooth.

thanks much and 73,  
ben, kd5byb

From gumbear at pacbell.net Sun Nov 8 10:23:04 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 8 Nov 2015 07:23:04 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <-2447974383018817811@unknownmsgid>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX> <-2447974383018817811@unknownmsgid>  
Message-ID: <6759780A644D4D02B022DCCBF32D4844@KB6NAX>

> I use Chinese ty-wrap clones to loosely bundle wires, and then cut and toss them when it's time to neaten the bundle. ....

That comes later. The tape secures the wires along the pathway that the finished harness will eventually follow. After all the wires are in place and terminated the ty-wraps are added as the tape is removed. The finished harness fits well and each wire is terminated with a proper stress loop. The other approach is to build the harness on a harness board and then drop it into the chassis and terminate the wires. The masking tape method gets the wiring done a bit more quickly.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From gumbear at pacbell.net Sun Nov 8 10:13:21 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 8 Nov 2015 07:13:21 -0800  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <CAB+LbZBdPW-RERQb0TJ1bttoxhpkLFT\_WyA60\_-3egR04\_sDtpA@mail.gmail.com>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC> <563A9D6C.6050000@comcast.net>  
<563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
<CAHaTdntpQamkBwwENUoxG3gj76P\_6Yp1tb4zRpEhh+76gvyTww@mail.gmail.com>  
<CAB+LbZBdPW-RERQb0TJ1bttoxhpkLFT\_WyA60\_-3egR04\_sDtpA@mail.gmail.com>  
Message-ID: <B2D3EF84A22A4FE6BF746AF09D4E6EFB@KB6NAX>

> gee, masking tape that is designed for masking a paint job is "crappy" for  
doing electronic wiring.....wonder why..????

Cuz it's crappy for paint work.

Arden Allen  
KB6NAX

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?Immanuel Kant

From 4cx250b at miamioh.edu Sun Nov 8 10:42:06 2015  
From: 4cx250b at miamioh.edu (MU 4CX250B)  
Date: Sun, 8 Nov 2015 08:42:06 -0700  
Subject: [BoatAnchors] Any Builders out There?  
In-Reply-To: <849210541.4694.1446996485947.JavaMail.mobile-sync@oabbd7>  
References: <E3E986390B5B455EAAE127BD6526AC17@WilsonPC>  
<65DCAF0090A14B49BE4D3C59F43DA17B@DaddyPC>  
<563A9D6C.6050000@comcast.net> <563AA2FC.50903@bellsouth.net>  
<0DEBF1C8D8437248BE53CD4213B89BD323007558@ISUEMBX02.ad.ilstu.edu>  
<0bca01d117c8\$c037de80\$40a79b80@miamioh.edu>  
<4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>  
<-2447974383018817811@unknownmsgid>  
<849210541.4694.1446996485947.JavaMail.mobile-sync@oabbd7>  
Message-ID: <-4961505129955285613@unknownmsgid>

Arden,

I'm afraid I don't see the difference between what you're talking about and what I'm talking about! I use disposable cheap white tie wraps to loosely bundle the wires. Tape could be used to accomplish the same goal. The purpose is just to locate the breakout points of wires in the harness.

Once I have terminated all the wires in a bundle, I then clip out the ty wraps and neatly harness the wires, using either lacing cord or new black ty-wraps. These days I use ty-wraps more than lacing cord, spacing them about 1 inch apart along the harness.

73,

Jim w8zr

Sent from my iPhone

On Nov 8, 2015, at 8:28 AM, Arden Allen <gumbear at pacbell.net> wrote:

>> I use Chinese ty-wrap clones to loosely bundle wires, and then cut and  
> toss them when it's time to neaten the bundle. ....

>

> That comes later. The tape secures the wires along the pathway that the finished harness will eventually follow. After all the wires are in place and terminated the ty-wraps are added as the tape is removed. The finished harness fits well and each wire is terminated with a proper stress loop. The other approach is to build the harness on a harness board and then drop it into the chassis and terminate the wires. The masking tape method gets the wiring done a bit more quickly.

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> Arden Allen

> KB6NAX

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> his treatment of animals.

> ?Immanuel Kant

From wb3fau55 at neo.rr.com Sun Nov 8 10:45:35 2015

From: wb3fau55 at neo.rr.com (wb3fau55 at neo.rr.com)

Date: Sun, 8 Nov 2015 10:45:35 -0500

Subject: [BoatAnchors] Any Builders out There?

In-Reply-To: <4A908E1EF51A4EDABB7441F511F9D45E@KB6NAX>

Message-ID: <20151108154535.0LMPN.89869.root@cdptpa-web07>

Arden, build control panels for my work. Hoffman enclosures etc. we use

something called spiro-wrap on the cable bundles. It comes in 1/4 and 1/2 in size and expands to fit your bundle, then we use ty-raps and sticky back mounting bases to hold the bundle in place. Is that any help? 73s Russ.----- Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

> I'm currently building something although it's not radio related. It's a patch panel box with lots of connectors and switches with wires running to and fro. One thing about doing the wiring that gripes me is the use of masking tape to secure wires as the wiring proceeds in order to get the lengths correct for eventually lacing them into neat harnesses. The tape I'm using is 3M's Tartan brand which is about as crappy a product there is for electronics projects. Pulling it off the roll the tape often splits and then what I do get coils up and sticks to itself before I can tape a wire in place. I need three hands to keep from testing my anger management skills, which ain't great to begin with. So I'm asking for recommendations for a fuss free brand of masking tape. Any good stuff out there?

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KB6NAX

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-----  
BoatAnchors mailing list  
BoatAnchors at theporch.com  
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From ddillman at igc.org Mon Nov 9 20:26:29 2015  
From: ddillman at igc.org (Richard Dillman)  
Date: Mon, 9 Nov 2015 17:26:29 -0800 (GMT-08:00)  
Subject: [BoatAnchors] MRHS mini-Night of Nights!  
Message-ID: <20876802.1447118789494.JavaMail.root@elwamui-muscovy.atl.sa.earthlink.net>

MRHS Newsletter No. 52 with full details of the mini-Night of Nights coming up on 14 November is now available! As was the case last year, the mNoN will concentrate on MF transmission and will extend well into the evening. HF and K6KPH will be active as well. Find the Newsletter here:

<http://tinyurl.com/pq5hxzu>

RD

=====  
Richard Dillman  
Chief Operator, Coast Station KSM  
Maritime Radio Historical Society  
<http://www.radiomarine.org>  
=====

From jgillespie at porchlight.ca Tue Nov 10 09:37:10 2015  
From: jgillespie at porchlight.ca (J Gillespie)  
Date: Tue, 10 Nov 2015 09:37:10 -0500  
Subject: [BoatAnchors] obscure radio problem  
References: <05F84D74F5504FE2B7DC6F664F2918A7@xpuser716b2b38>  
<C5660F66F8944CC7AFA8F4E9D6B85BBF@KB6NAX>  
<0DEBF1C8D8437248BE53CD4213B89BD3230077E9@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <A630F9A400124287BD30026E6EEAB631@xpuser716b2b38>

Hi Rodger

Thanks for your feedback on this weird coil issue.

Years ago, I was an electro/mechanical product designer with TRW automotive electronics. I am somewhat familiar with the components you described. Central electronic boxes go back a way. Volkswagon was the first one I remember if memory serves. I watched them being assembled in Germany on a trip there once. Several layers of pre-stamped 1/32" copper sheets were layered into a plastic box assembly that was loaded with holes everywhere. Each copper sheet had many copper bridging sections to keep the individual copper terminals in place during assembly. Once all the sheets (about 5 if memory serves) and their subsequent insulating wafer layers were assembled, a stamp press stamped out all those copper bridges. If someone ever thought of repairing one after assembly the task would be daunting, if not totally impossible. The copper oxidizes over time, eventually turning into a green slimy mess, it would be a great idea to backfill those boxes to prevent ingress of moisture, air etc. I seem to recall some being epoxy filled.

I stripped the problem coil of all the wires, caps etc. to get down to just its terminal connections. I hate working with coils, they often seem to be made out of egg shells wound with #42 copper or smaller spider webs. We definitely need the hand of a specialist brain surgeon. This coil has two primary coils wound in series. Once down to just terminals, one coil is definitely open, the other has several megohms of leakage resistance, they no longer pass voltage. Interestingly, I was injecting 200 volts DC and reading 180 volts at the plate. That's a 20 volt drop with a current of way less than 1 ma. The numbers simply don't add up. Ohms law never lies...

the coil is shot. This assembly is riveted between two steel sheets, the whole multi coil assembly plus the band switch needs to be dissassembled to make repairs to this coil. I think I'll return the radio, suggesting they locate a better candidate to invest their serious restoration efforts on.

Amazing what a few little critters can do while radios are stored in damp basements or way out back in the garage or shed for decades !! Thanks again..... John

----- Original Message -----

From: "Singley, Rodger via BoatAnchors" <boatanchors at theporch.com>

To: "Arden Allen" <gumbear at pacbell.net>

Cc: <boatanchors at theporch.com>

Sent: Friday, November 06, 2015 3:38 PM

Subject: Re: [BoatAnchors] obscure radio problem

>I agree with Arden that conductive residue, likely the result of mouse  
>activity, is responsible for seeing voltage present when the circuit is  
>only loaded by the very high input resistance of your volt meter.

>

> A couple of years ago I experienced an odd issue with my 2006 GMC diesel  
> pickup. I noticed one day that the check engine light was on before I had  
> even put the key in the ignition switch but it started and ran normally  
> however when I tried to shut the engine off it kept running until I pulled  
> the ECM fuse. This behavior was very random and most of the time the  
> pickup behaved normally with no illuminated CEL and the only stored  
> trouble code was loss of communications with the transmission control  
> module. After spending some serious time with the 5 volume factory  
> service manuals, which make a radio service manual look like a child's  
> comic book, I located the problem. GM uses a box called the UBEC or  
> Underhood Bussed Electrical Center which has fuses and relays on the top  
> level, several very large connections to wiring harnesses on the bottom,  
> and sandwiched in between is a group of bare copper wires contained in a  
> board laid out like a maze providing the needed interconnect  
> ions and

> looking very much like the bus wires in a 1920s radio. A mouse had  
> urinated on the top level and it ran down creating corrosive residue  
> between a wire in the constant 12 volt bus and another that should only  
> have voltage with the ignition switched on. The key was when it was humid  
> enough the residue was sufficiently conductive to create problems thus the  
> seemingly random behavior. I watched this behavior with a couple of  
> meters and with artificially created humidity once the batteries were  
> connected I could see the voltage slowly rise on the switched 12 volt bus  
> (which shouldn't have any voltage) and once it reached 9 volts the ECM  
> turned on the relay powering this bus allowing it to rise to full voltage.  
> It took a lot of time to figure out what was going on but once I  
> identified the problem it took 15 minutes to replace the UBEC with a new

> one. After disassembling the old UBEC I didn't trust my ability to get  
> all of the many bus wires properly contained in their guid  
> es and I  
> have to say that part of the component looks like it was built in a very  
> underdeveloped country.  
>  
> Never underestimate the power of a mouse!  
>  
> Rodger WQ9E  
>  
> Dr. Rodger B. Singley  
> Professor of Marketing  
>  
>  
>> -----Original Message-----  
>> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf  
>> Of Arden Allen via BoatAnchors  
> @theporch.com>  
>> Subject: Re: [BoatAnchors] obscure radio problem  
>  
> \_\_\_\_\_  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From n7rk at cox.net Thu Nov 12 11:22:51 2015  
From: n7rk at cox.net (Dave Hollander)  
Date: Thu, 12 Nov 2015 09:22:51 -0700  
Subject: [BoatAnchors] FS: Rare National NC-80X Receiver - Price Reduced  
Message-ID: <5644BCDB.5010809@cox.net>

National NC-80X Receiver - \$250 plus shipping.

This is a rare and not often seen NC-80X receiver. This is a ten tube superhet covering 540 to 30,000 kilocycles in four ranges with a crystal filter. Uses moving catacomb coil unit similar to the NC-100 series. This is an ac/dc receiver but still pretty heavy. National offered this from 1937 to 1938. I recapped this about 12 years ago but never got around to replacing the electrolytics in the power supply and when I fired it up a few days ago - major hum! The chassis is dirty but should clean up nicely. It has been sitting in my dry garage ( I live in Phoenix) ever since. The escutcheon is not fastened down as I don't recall how it was supposed to be attached. The light bar is also loose but I have it. Catacomb coil assembly moves smoothly. The main tuning is incredibly smooth. Includes a photocopy of the manual. No Trades.

<http://n7rk.com/radiostuff9/nc80x.jpg>  
<http://n7rk.com/radiostuff9/nc80x2.jpg>  
<http://n7rk.com/radiostuff9/nc80x3.jpg>  
<http://n7rk.com/radiostuff9/nc80x4.jpg>  
<http://n7rk.com/radiostuff9/nc80x5.jpg>  
<http://n7rk.com/radiostuff9/nc80x7.jpg>  
<http://n7rk.com/radiostuff9/nc80x8.jpg>  
<http://n7rk.com/radiostuff9/nc80x91.jpg>  
<http://n7rk.com/radiostuff9/nc80x92.jpg>  
<http://n7rk.com/radiostuff9/nc80x93.jpg>

73 and tnx for looking. Dave N7RK

--

\*\*\*\*\*

Dave N7RK                      Boatanchors Home Page: <http://n7rk.com>  
Phoenix, Arizona              \*DXCC Honor Roll\*      \*WAZ#22 - 75 Meter SSB\*

ex-XE2/N7RK, N7RK/ZB2, VK2ERK, ZM0AJN, WB6NRK, WN6IWX

Boatanchor and Antique Radio Collector

From kd5byb at kd5byb.net   Fri Nov 13 09:04:48 2015

From: kd5byb at kd5byb.net (kd5byb at kd5byb.net)

Date: Fri, 13 Nov 2015 07:04:48 -0700

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115 VAC  
power unit

Message-ID:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

Good morning all,

I've been restoring a WS19 Mk III Canadian power supply. It is not the usual dynamotor-type, but is the 115 VAC input type. It supplies the 12 VDC, 260 VDC, and 540 VDC needed by the WS19 transceiver.

So far, repairs have included replacement of the electrolytic capacitors, replacement of the shorted selenium rectifiers by silicon, and installation of home-built solid-state 1N4007 plus resistor based substitutes for the 6X5 rectifiers. This is because I've been advised by the folks on the WS19 list that the 6X5's have a nasty habit of shorting out which takes the power supply transformer with them.

The output connector has signs of arcing damage. These connectors are



made from a cylindrical metal shell, which a piece of insulating material perpendicular to the cylinder that holds the connector pins. In the center is a metal fastener that is hollow in the center like a hollow metal rivet.

There are obvious arc-tracks from the 540 VDC pin to ground via the rivet and from the 260 VDC pin to ground. It isn't just a surface phenomena, when probed with a tool one can feel that the track has been etched into the insulating material.

Interestingly, when I powered the unit up with only the 260 VDC rectifier replacements installed, it came up to about 300 VDC with no arcing. It is possible that there was some debris in the connector that was burned out when the arc track was formed. I've not yet fired up the 540 VDC output yet.

I'd like to repair it if possible, as while these connectors are not made from unobtainium, they are not super-easy to find, and when found, are not cheap.

I've toyed with the idea of taping off the connector, plugging up the center rivet hole, and sandblasting the inside of the connector to clean out the carbon. The residue from the sandblasting would be cleaned out and the inside would get flushed with the high-strength industrial isopropyl alcohol to remove any traces of oil and other residue. I'd then seal it with some sort of varnish with a small paintbrush and very careful hand. I don't have a source of honest-to-goodness insulating varnish, so I'll probably use whatever varnish I can find at Home Depot.

Are there other, better methods of doing this?

thanks much,  
ben

From gumbear at pacbell.net Fri Nov 13 11:52:31 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Fri, 13 Nov 2015 08:52:31 -0800

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115

VACpower unit

In-Reply-To:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

Message-ID: <44E27321310745CCA4C106A5704892B6@KB6NAX>

> .....taping off the connector, plugging up the center rivet hole, and sandblasting the inside of the connector to clean out the carbon. The residue from the sandblasting would be cleaned out and the inside would get flushed with the high-strength industrial isopropyl alcohol to remove any traces of oil and other residue. I'd then seal it with some sort of varnish with a small paintbrush and very careful hand. I don't have a source of honest-to-goodness insulating varnish, so I'll probably use whatever varnish I can find at Home Depot.  
.....

.....Are there other, better methods of doing this?

Ben, I would first set up a sensitive leakage test by applying say 100VDC through your portable DVM in voltage measuring mode. The DVM's voltage mode input resistance is probably 10 megohms. The voltage you measure divided by the input resistance is the leakage current you are measuring (Ohm's Law). Compare the readings you get with the tracked connector pins with those that are not tracked. Once you have ascertained the degree of damage to the connector take a Dremel tool with a small diamond ball tip and grind out the tracks using your leakage measuring setup to indicate complete removal of the tracks. Blow the dust out and then flush out with a good insulating oil like WD40. Don't remove the WD40 once the rinse produces no more residue. Roast the connector for while under a 100 watt bulb (the old fashioned kind that wastes energy in the form of heat). Varnish won't do as much good as a light oil that soaks into the pores of the insulation. That's it.

Arden Allen  
KB6NAX

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We can judge the heart of a man by  
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?Immanuel Kant

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Date: Fri, 13 Nov 2015 08:52:31 -0800

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In-Reply-To:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv

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> .....taping off the connector, plugging up the center rivet hole, and sandblasting the inside of the connector to clean out the carbon. The residue from the sandblasting would be cleaned out and the inside would get flushed with the high-strength industrial isopropyl alcohol to remove any traces of oil and other residue. I'd then seal it with some sort of varnish with a small paintbrush and very careful hand. I don't have a source of honest-to-goodness insulating varnish, so I'll probably use whatever varnish I can find at Home Depot. ....

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?Immanuel Kant

From spr at earthlink.net Fri Nov 13 12:14:24 2015

From: spr at earthlink.net (Scott Robinson)

Date: Fri, 13 Nov 2015 09:14:24 -0800

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115 VAC power unit

In-Reply-To:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv

er.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

Message-ID: <56461A70.2080307@earthlink.net>

Hi Benjamin,

I'd not do the sandblasting, but instead clear the carbon out of the arc paths using a very sharp tool, perhaps a dental pick. Then get some high voltage coating--I expect you still can--or PC board conformal coating spray, and paint it with that.

Peace,

Scott Robinson

On 11/13/15 6:04 AM, Benjamin D. Hall KD5BYB via BoatAnchors wrote:

> Good morning all,

>

> I've been restoring a WS19 Mk III Canadian power supply. It is not the  
> usual dynamotor-type, but is the 115 VAC input type. It supplies the 12  
> VDC, 260 VDC, and 540 VDC needed by the WS19 transceiver.

>

> So far, repairs have included replacement of the electrolytic  
> capacitors, replacement of the shorted selenium rectifiers by silicon,  
> and installation of home-built solid-state 1N4007 plus resistor based  
> substitutes for the 6X5 rectifiers. This is because I've been advised  
> by the folks on the WS19 list that the 6X5's have a nasty habit of  
> shorting out which takes the power supply transformer with them.

>

> The output connector has signs of arcing damage. These connectors are  
> made from a cylindrical metal shell, which a piece of insulating  
> material perpendicular to the cylinder that holds the connector pins.  
> In the center is a metal fastener that is hollow in the center like a  
> hollow metal rivet.

>

> There are obvious arc-tracks from the 540 VDC pin to ground via the  
> rivet and from the 260 VDC pin to ground. It isn't just a surface  
> phenomena, when probed with a tool one can feel that the track has been  
> etched into the insulating material.

>

> Interestingly, when I powered the unit up with only the 260 VDC  
> rectifier replacements installed, it came up to about 300 VDC with no  
> arcing. It is possible that there was some debris in the connector that  
> was burned out when the arc track was formed. I've not yet fired up the  
> 540 VDC output yet.

>

> I'd like to repair it if possible, as while these connectors are not  
> made from unobtainium, they are not super-easy to find, and when found,  
> are not cheap.  
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> I've toyed with the idea of taping off the connector, plugging up the  
> center rivet hole, and sandblasting the inside of the connector to clean  
> out the carbon. The residue from the sandblasting would be cleaned out  
> and the inside would get flushed with the high-strength industrial  
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> then seal it with some sort of varnish with a small paintbrush and very  
> careful hand. I don't have a source of honest-to-goodness insulating  
> varnish, so I'll probably use whatever varnish I can find at Home Depot.  
>  
> Are there other, better methods of doing this?  
>  
> thanks much,  
> ben  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From spr at earthlink.net Fri Nov 13 12:22:14 2015  
From: spr at earthlink.net (Scott Robinson)  
Date: Fri, 13 Nov 2015 09:22:14 -0800  
Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit  
In-Reply-To: <44E27321310745CCA4C106A5704892B6@KB6NAX>  
References:  
<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>  
<44E27321310745CCA4C106A5704892B6@KB6NAX>  
Message-ID: <56461C46.5090200@earthlink.net>

and Scott comments:

WD-40 is deodorized kerosene, AKA Stoddard solvent. It will evaporate  
over a few months and so is not a durable solution. Brushing lacquer is  
pretty thin and might be a better candidate.

Peace,

Scott

On 11/13/15 8:52 AM, Arden Allen via BoatAnchors wrote:

>  
> Blow the dust out and then flush out with a good insulating oil like  
> WD40. Don't remove the WD40 once the rinse produces no more residue.  
> Roast the connector for while under a 100 watt bulb (the old fashioned  
> kind that wastes energy in the form of heat). Varnish won't do as much  
> good as a light oil that soaks into the pores of the insulation. That's  
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> Arden Allen  
> KB6NAX  
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From spr at earthlink.net Fri Nov 13 12:22:14 2015  
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Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
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>  
> Arden Allen  
> KB6NAX  
>

From gumbear at pacbell.net Fri Nov 13 15:40:21 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Fri, 13 Nov 2015 12:40:21 -0800

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115

VACpower unit

In-Reply-To: <56461C46.5090200@earthlink.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX> <56461C46.5090200@earthlink.net>

Message-ID: <87A81FDF7A164D6080502CF8B6D10F7E@KB6NAX>

> WD-40 is deodorized kerosene, AKA Stoddard solvent. It will evaporate  
over a few months and so is not a durable solution. Brushing lacquer is  
pretty thin and might be a better candidate.

Actually there is more to WD40 than just the solvent, Scott. A fair amount  
of paraffin or a related agent is dissolved in the solvent and can be seen  
in a glass bottle that settles when not disturbed for some time. That's a  
good reminder to shake up your can of WD40 before using. It's the sticky  
residue that everyone complains attracts dust but is the protectant that  
holds off moisture and lasts a long time. That's the stuff you want the  
insulator soaked with.

Arden Allen

KB6NAX

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?Immanuel Kant

From gumbear at pacbell.net Fri Nov 13 15:40:21 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Fri, 13 Nov 2015 12:40:21 -0800

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115

VACpower unit

In-Reply-To: <56461C46.5090200@earthlink.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX> <56461C46.5090200@earthlink.net>

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KB6NAX

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From gumbear at pacbell.net Fri Nov 13 19:05:37 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Fri, 13 Nov 2015 16:05:37 -0800

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115

VACpower unit

In-Reply-To: <56464E40.7060402@earthlink.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX> <56461C46.5090200@earthlink.net>

<87A81FDF7A164D6080502CF8B6D10F7E@KB6NAX> <56464E40.7060402@earthlink.net>

Message-ID: <2C5B7672575B480DA6E0782A6F139EDC@KB6NAX>

> Interesting...

> Some years ago, Barry Ornitz, a PhD chemist active on the BA list,  
read the ingredient safety list for WD-40 (MSDS) and told me what I told  
you.

> Curiously yours,

> /scott

I miss Barry's council. I wonder if anyone knows of his whereabouts....



arden

From dave at horsfall.org Fri Nov 13 22:07:06 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Sat, 14 Nov 2015 14:07:06 +1100 (EST)  
Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit  
In-Reply-To: <87A81FDF7A164D6080502CF8B6D10F7E@KB6NAX>  
References:  
<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>  
<44E27321310745CCA4C106A5704892B6@KB6NAX> <56461C46.5090200@earthlink.net>  
<87A81FDF7A164D6080502CF8B6D10F7E@KB6NAX>  
Message-ID: <alpine.BSF.2.11.1511141401200.40321@aneurin.horsfall.org>

On Fri, 13 Nov 2015, Arden Allen via BoatAnchors wrote:

> WD-40 is deodorized kerosene, AKA Stoddard solvent. [...] ]  
>  
> Actually there is more to WD40 than just the solvent, Scott. A fair  
> amount of paraffin or a related agent is dissolved in the solvent and  
> can be seen in a glass bottle that settles when not disturbed for some  
> time. [...]

Trivia: In the UK (at least when I lived there many yonks ago), they  
called kerosene "paraffin", thus: paraffin heaters. A real fire hazard!

I guess it's paraffin wax?

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From ddillman at igc.org Sat Nov 14 00:12:23 2015  
From: ddillman at igc.org (Richard Dillman)  
Date: Fri, 13 Nov 2015 21:12:23 -0800 (GMT-08:00)  
Subject: [BoatAnchors] MRHS mini-Night of Nights Coming Up!  
Message-ID: <2971201.1447477943343.JavaMail.root@elwamui-  
polski.atl.sa.earthlink.net>

Mini Night of Nights Coming Up! Saturday 14 November. Join us on the air or in  
person. Full details in these two issues of the MRHS Newsletter:

<http://tinyurl.com/pq5hxzu>

<http://tinyurl.com/nzpv1jg>

=====  
Richard Dillman  
Chief Operator, Coast Station KSM  
Maritime Radio Historical Society  
<http://www.radiomarine.org>  
=====

From kd5byb at kd5byb.net Sat Nov 14 10:42:45 2015  
From: kd5byb at kd5byb.net (Ben Hall)  
Date: Sat, 14 Nov 2015 09:42:45 -0600  
Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit  
In-Reply-To: <44E27321310745CCA4C106A5704892B6@KB6NAX>  
References:  
<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>  
<44E27321310745CCA4C106A5704892B6@KB6NAX>  
Message-ID: <56475675.6020506@kd5byb.net>

Good morning Arden and all,

On 11/13/2015 10:52 AM, Arden Allen wrote:

> Ben, I would first set up a sensitive leakage test by applying say  
> 100VDC through your portable DVM in voltage measuring mode.

I started to do this last night, but realized that the pin pairs that  
have arc tracks have bleeder resistors across them and the returns for  
the B+ supplies are tied to ground.

I thought about disconnecting the wiring so I could do the test, but  
decided that if I was going to do that, I'm already 90% of the way down  
the road of replacing the connector. Last night I recalled that I had a  
junker WS19 junction box that's got a smashed up switch, but at least  
one good 12-point connector. If I can't save this one on this supply,  
I'll replace it with that one.

> Once you have  
> ascertained the degree of damage to the connector take a Dremel tool  
> with a small diamond ball tip and grind out the tracks using your  
> leakage measuring setup to indicate complete removal of the tracks.

After thinking about it, the Dremel / dental pick method was a lot less  
nasty than the sandblasting method. So that's what I did late last night.

It was interesting - using the Dremel with a tiny ball bit (I think it

was tungsten carbide, not diamond) I could definitely tell the difference between "good" undamaged material and material that was deteriorated from the arcing. It took quite a bit of material in places to get to good, solid insulator.

Blew out the dust, did some alcohol on a q-tip cleaning, and other than right at the pins, all the nasty burned stuff is now gone.

> Roast the connector for while under a 100 watt bulb (the old fashioned  
> kind that wastes energy in the form of heat).

Doing that right now, but only have a 60 watt bulb or a 300 watt heat lamp, so am using the 60. If it doesn't get roasty enough, I'll get the heat lamp.

Because I had to remove a significant amount of material around some of the pins, some of the pins are a little more "wobbly" than I'd like. I'm going to stake the pins back in and fill some of the big gaps with epoxy. After that, I'm not sure yet.

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Another option is polyurethane. Got a can of that in the garage; some of the online sources say polyurethane is a good insulator. I don't know how much it will "soak into" the insulating material. I know it soaks in a little bit on really soft wood like pine.

We'll see - I'll let the group know how I make out.

thanks much,  
ben

From kd5byb at kd5byb.net Sat Nov 14 10:42:45 2015

From: kd5byb at kd5byb.net (Ben Hall)

Date: Sat, 14 Nov 2015 09:42:45 -0600

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit

In-Reply-To: <44E27321310745CCA4C106A5704892B6@KB6NAX>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX>  
Message-ID: <56475675.6020506@kd5byb.net>

Good morning Arden and all,

On 11/13/2015 10:52 AM, Arden Allen wrote:

> Ben, I would first set up a sensitive leakage test by applying say  
> 100VDC through your portable DVM in voltage measuring mode.

I started to do this last night, but realized that the pin pairs that have arc tracks have bleeder resistors across them and the returns for the B+ supplies are tied to ground.

I thought about disconnecting the wiring so I could do the test, but decided that if I was going to do that, I'm already 90% of the way down the road of replacing the connector. Last night I recalled that I had a junker WS19 junction box that's got a smashed up switch, but at least one good 12-point connector. If I can't save this one on this supply, I'll replace it with that one.

> Once you have  
> ascertained the degree of damage to the connector take a Dremel tool  
> with a small diamond ball tip and grind out the tracks using your  
> leakage measuring setup to indicate complete removal of the tracks.

After thinking about it, the Dremel / dental pick method was a lot less nasty than the sandblasting method. So that's what I did late last night.

It was interesting - using the Dremel with a tiny ball bit (I think it was tungsten carbide, not diamond) I could definitely tell the difference between "good" undamaged material and material that was deteriorated from the arcing. It took quite a bit of material in places to get to good, solid insulator.

Blew out the dust, did some alcohol on a q-tip cleaning, and other than right at the pins, all the nasty burned stuff is now gone.

> Roast the connector for while under a 100 watt bulb (the old fashioned  
> kind that wastes energy in the form of heat).

Doing that right now, but only have a 60 watt bulb or a 300 watt heat lamp, so am using the 60. If it doesn't get roasty enough, I'll get the heat lamp.

Because I had to remove a significant amount of material around some of the pins, some of the pins are a little more "wobbly" than I'd like. I'm going to stake the pins back in and fill some of the big gaps with epoxy. After that, I'm not sure yet.

As others have noted, Barry Ornitz at one time noted that WD40 had no long-term lubricating component. The old-engine and antique firearm crowds agree. Somewhere, the XYL has little glass vials and if I've still got a WD40 brand of WD40 in the garage, I'll shake it up and shoot some into a vial, let it evaporate, and see what remains. I suspect my last real can of WD40 got replaced with the cheap low-end Walmart substitute years ago, so I might have to go buy a new can.

Another option is polyurethane. Got a can of that in the garage; some of the online sources say polyurethane is a good insulator. I don't know how much it will "soak into" the insulating material. I know it soaks in a little bit on really soft wood like pine.

We'll see - I'll let the group know how I make out.

thanks much,  
ben

From jim.isbell at gmail.com Sat Nov 14 10:55:12 2015  
From: jim.isbell at gmail.com (Jim Isbell, W5JAI)  
Date: Sat, 14 Nov 2015 08:55:12 -0700  
Subject: [BoatAnchors] Collins Forums?  
Message-ID: <CAB+LbZBtWmk6VP5WkkeR5xo-Dj4hP3abbVQZexVyeza-7+F89A@mail.gmail.com>

I am getting my Collins gear back on the air after almost ten years being dormant while I fought Cancer. I won and now, back to the real world.

I used to be subscribed to a couple of Collins forums that were very helpful. I don't remember what they were. Anyone know who is on line about Collins these days?

My equipment is two S Lines and a KWM2 and a 30L1.

From jim.isbell at gmail.com Sat Nov 14 11:23:31 2015  
From: jim.isbell at gmail.com (Jim Isbell, W5JAI)  
Date: Sat, 14 Nov 2015 09:23:31 -0700  
Subject: [BoatAnchors] name of forum?  
Message-ID: <CAB+LbZD0xOY14GzKm5kSvprd31ouSsNWEbFD=\_P8WZ0dvC8RYA@mail.gmail.com>

I tried posting to Boatanchors and received a bounce notice, but apparently the message did go through because I received answers to the offer of free equipment. Then today I posted again, on Collins equipment, and again got a bounce notice. I assume that it still went through? This time I investigated, and made some changes on my profile. None that would affect the subscription...I think..... But now the title of the post recipient

has "(new)" after it. Whats up?

From w4rl at bellsouth.net Sat Nov 14 11:55:43 2015  
From: w4rl at bellsouth.net (Robert)  
Date: Sat, 14 Nov 2015 10:55:43 -0600  
Subject: [BoatAnchors] Collins Forums?  
In-Reply-To: <CAB+LbZBtWmk6VP5WkkeR5xo-Dj4hP3abbVQZexVyeza-7+F89A@mail.gmail.com>  
References: <CAB+LbZBtWmk6VP5WkkeR5xo-Dj4hP3abbVQZexVyeza-7+F89A@mail.gmail.com>  
Message-ID: <5647678F.7010905@bellsouth.net>

Jim,

First thank God you're cured....!! Ham radio ie Collins radios is an unmeasurable mile distant second when it comes to your health.

Go to this Internet site and have fun exploring.  
<http://www.collinsradio.org/>

Welcome back, Shipmate.....welcome back.

73

Robert W4RL  
CCA Member

On 11/14/2015 9:55 AM, Jim Isbell, W5JAI via BoatAnchors wrote:  
> I am getting my Collins gear back on the air after almost ten years being  
> dormant while I fought Cancer. I won and now, back to the real world.  
>  
> I used to be subscribed to a couple of Collins forums that were very  
> helpful. I dont remember what they were. Anyone know who is on line about  
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>  
> My equipment is two S Lines and a KWM2 and a 30L1.  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From 4cx250b at miamioh.edu Sat Nov 14 12:02:36 2015  
From: 4cx250b at miamioh.edu (MU 4CX250B)  
Date: Sat, 14 Nov 2015 12:02:36 -0500

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115

VACpower unit

In-Reply-To: <56475675.6020506@kd5byb.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX> <56475675.6020506@kd5byb.net>

Message-ID: <2398555594464580155@unknownmsgid>

Ben,

You might consider it using Bondic (Google it and buy on-line). It's a new space-age plastic that you dispense as a clear gel from a small syringe. You fill in holes, cracks, etc., and then shine UV light on it from an LED (supplied with the dispenser), which in a few seconds hardens the gel into a tough, rock-hard plastic that bonds to most anything. I use it to repair connectors, tube sockets, broken eyeglasses, etc. A complete kit costs about \$20 but is good for dozens of repairs and has a very long shelf life.

73,

Jim W8ZR

Sent from my iPad

> On Nov 14, 2015, at 10:43 AM, Ben Hall via BoatAnchors <boatanchors at  
theporch.com> wrote:

>

> Good morning Arden and all,

>

>> On 11/13/2015 10:52 AM, Arden Allen wrote:

>> Ben, I would first set up a sensitive leakage test by applying say

>> 100VDC through your portable DVM in voltage measuring mode.

>

> I started to do this last night, but realized that the pin pairs that have arc tracks have bleeder resistors across them and the returns for the B+ supplies are tied to ground.

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> I thought about disconnecting the wiring so I could do the test, but decided that if I was going to do that, I'm already 90% of the way down the road of replacing the connector. Last night I recalled that I had a junker WS19 junction box that's got a smashed up switch, but at least one good 12-point connector. If I can't save this one on this supply, I'll replace it with that one.

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>> Once you have

>> ascertained the degree of damage to the connector take a Dremel tool

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> Blew out the dust, did some alcohol on a q-tip cleaning, and other than right at the pins, all the nasty burned stuff is now gone.

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> We'll see - I'll let the group know how I make out.

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> thanks much,

> ben

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

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From: 4cx250b at miamioh.edu (MU 4CX250B)

Date: Sat, 14 Nov 2015 12:02:36 -0500

Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit



In-Reply-To: <56475675.6020506@kd5byb.net>

References:

<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>

<44E27321310745CCA4C106A5704892B6@KB6NAX> <56475675.6020506@kd5byb.net>

Message-ID: <2398555594464580155@unknownmsgid>

Ben,

You might consider it using Bondic (Google it and buy on-line). It's a new space-age plastic that you dispense as a clear gel from a small syringe. You fill in holes, cracks, etc., and then shine UV light on it from an LED (supplied with the dispenser), which in a few seconds hardens the gel into a tough, rock-hard plastic that bonds to most anything. I use it to repair connectors, tube sockets, broken eyeglasses, etc. A complete kit costs about \$20 but is good for dozens of repairs and has a very long shelf life.

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> thanks much,

> ben

> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From anchor at ec.rr.com Sat Nov 14 12:31:52 2015

From: anchor at ec.rr.com (Al Parker)

Date: Sat, 14 Nov 2015 12:31:52 -0500

Subject: [BoatAnchors] name of forum?

In-Reply-To: <CAB+LbZD0x0Y14GzKm5kSvprd31ouSsNWEbFD=\_P8WZ0dvC8RYA@mail.gmail.com>

References: <CAB+LbZD0x0Y14GzKm5kSvprd31ouSsNWEbFD=\_P8WZ0dvC8RYA@mail.gmail.com>

Message-ID: <56477008.1050809@ec.rr.com>

Hi Jim,

Welcome back, and great to hear you've bested the "beast".

The problem of bounced might be that you have posted in html format mode rather than plain text. Most lists will accept both, a few don't.  
73,

Al, W8UT

[www.boatanchors.org](http://www.boatanchors.org)

[www.hammarlund.info](http://www.hammarlund.info)

"There is nothing -- absolutely nothing -- half so much worth doing as simply messing about in boats"  
Ratty, to Mole

On 11/14/2015 11:23 AM, Jim Isbell, W5JAI via BoatAnchors wrote:

> I tried posting to Boatanchors and received a bounce notice, but apparently  
> the message did go through because I received answers to the offer of free  
> equipment. Then today I posted again, on Collins equipment, and again got  
> a bounce notice. I assume that it still went through? This time I  
> investigated, and made some changes on my profile. None that would affect  
> the subscription...I think..... But now the title of the post recipient  
> has "(new)" after it. Whats up?  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From wb3fau55 at neo.rr.com Sat Nov 14 14:31:49 2015

From: wb3fau55 at neo.rr.com (wb3fau55 at neo.rr.com)

Date: Sat, 14 Nov 2015 14:31:49 -0500

Subject: [BoatAnchors] WD-40 vs CRC 3-36

Message-ID: <20151114193149.9JMM1.187964.root@cdptpa-web07>

So yes we have heard the shortcomings of WD-40. Is the CRC 3-36 the same or very similar? Russ.

From w5sum at comcast.net Sat Nov 14 14:52:38 2015

From: w5sum at comcast.net (w5sum at comcast.net)

Date: Sat, 14 Nov 2015 13:52:38 -0600

Subject: [BoatAnchors] WD-40 vs CRC 3-36

In-Reply-To: <20151114193149.9JMM1.187964.root@cdptpa-web07>

References: <20151114193149.9JMM1.187964.root@cdptpa-web07>

Message-ID: <F8536969CD814C37B243076429D532D5@MININTMC1HLDC>

as my old pappy would say, just dunk it in kerosene!

-----Original Message-----

From: Russ Dworakowski WB3FAU via BoatAnchors

Sent: Saturday, November 14, 2015 1:31 PM

To: boatanchors at theporch.com

Subject: [BoatAnchors] WD-40 vs CRC 3-36

So yes we have heard the shortcomings of WD-40. Is the CRC 3-36 the same or very similar? Russ.

-----  
BoatAnchors mailing list

BoatAnchors at theporch.com

<https://minime.theporch.com/mailman/listinfo/boatanchors>

From 1oldlens1 at ix.netcom.com Sat Nov 14 14:59:52 2015

From: 1oldlens1 at ix.netcom.com (Richard Knoppow)

Date: Sat, 14 Nov 2015 11:59:52 -0800

Subject: [BoatAnchors] WD-40 vs CRC 3-36

In-Reply-To: <20151114193149.9JMM1.187964.root@cdptpa-web07>

References: <20151114193149.9JMM1.187964.root@cdptpa-web07>

Message-ID: <564792B8.2050802@ix.netcom.com>

I don't know what is in the CRC product. WD-40 works quite well for some things but should not be relied on for permanent lubrication and is not a good contact cleaner since it leaves a residue. As a cleaner it works fine and is a fairly effective penetrating oil although there are much better ones.

If you use it for cleaning it should be rinsed off with a solvent like Naphtha and where there are surfaces needing lubrication a proper machine oil or grease should be used. For some purposes a good cleaner and lubricant can be made by dissolving machine oil in Kerosene, about 20% oil. This was a standard for mechanical typewriters. I use Kano Microil, a light machine oil of good quality for lubricating and synthetic grease where a grease is needed. Kano also makes an excellent penetrating oil.

WD-40 works well for its original purpose of displacing moisture.

On 11/14/2015 11:31 AM, Russ Dworakowski WB3FAU via BoatAnchors wrote:

> So yes we have heard the shortcomings of WD-40. Is the CRC 3-36 the same or very similar? Russ.

> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From dave at horsfall.org Sat Nov 14 15:07:37 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Sun, 15 Nov 2015 07:07:37 +1100 (EST)  
Subject: [BoatAnchors] WD-40 vs CRC 3-36  
In-Reply-To: <20151114193149.9JMM1.187964.root@cdptpa-web07>  
References: <20151114193149.9JMM1.187964.root@cdptpa-web07>  
Message-ID: <alpine.BSF.2.11.1511150704520.50462@aneurin.horsfall.org>

On Sat, 14 Nov 2015, Russ Dworakowski WB3FAU via BoatAnchors wrote:

> So yes we have heard the shortcomings of WD-40. Is the CRC 3-36 the  
> same or very similar? Russ.

If you mean CRC 2-26, they are (or were) quite different. Back in my day, if you thought you needed WD-40, then you probably needed CRC 2-26, as WD left a greasy stain.

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From anchor at ec.rr.com Sat Nov 14 16:42:21 2015  
From: anchor at ec.rr.com (Al Parker)  
Date: Sat, 14 Nov 2015 16:42:21 -0500  
Subject: [BoatAnchors] Barry Ornitz  
In-Reply-To: <2C5B7672575B480DA6E0782A6F139EDC@KB6NAX>  
References:  
<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>  
<44E27321310745CCA4C106A5704892B6@KB6NAX> <56461C46.5090200@earthlink.net>  
<87A81FDF7A164D6080502CF8B6D10F7E@KB6NAX> <56464E40.7060402@earthlink.net>  
<2C5B7672575B480DA6E0782A6F139EDC@KB6NAX>  
Message-ID: <5647AABD.1050102@ec.rr.com>

Hi Arden, Scott, et al,

Several yrs ago, 5-7?, Barry showed up briefly at the Shelby, NC hamfest looking hale and hearty, in improved health and with his new wife. I didn't recognize him. He had been a regular at Shelby, usually late on Sat. AM's, and always stopped by to chat with his BA group of friends. Not sure where he was living then, and haven't heard from him

since. I used to email with him occasionally. I think he said then that he was still lurking on this email list. He's missed.  
73,

Al, W8UT  
[www.boatanchors.org](http://www.boatanchors.org)  
[www.hammarlund.info](http://www.hammarlund.info)

"There is nothing -- absolutely nothing -- half so much worth doing as simply messing about in boats"  
Ratty, to Mole

On 11/13/2015 7:05 PM, Arden Allen via BoatAnchors wrote:

>> Interesting...  
>  
>> Some years ago, Barry Ornitz, a PhD chemist active on the BA list,  
> read the ingredient safety list for WD-40 (MSDS) and told me what I told  
> you.  
>  
>> Curiously yours,  
>  
>> /scott  
>  
> I miss Barry's council. I wonder if anyone knows of his whereabouts....  
>  
> arden  
> -----

From arc5 at ix.netcom.com Sat Nov 14 20:51:36 2015  
From: arc5 at ix.netcom.com (=?utf-8?B?YXJjNUBpeC5uZXRjb20uY29t?=  
Date: Sun, 15 Nov 2015 01:51:36 GMT  
Subject: [BoatAnchors] QRV 426  
Message-ID: <000f4244.684461e23618778d@ix.netcom.com>

Dave in Dallas. 0150Z.Hearing the UV NDB in Memphis, TN on 426. ?  
Listening.....?  
Sent from my ain't-so-smartphone.

From smithab11 at comcast.net Sat Nov 14 22:35:33 2015

From: smithab11 at comcast.net (B. Smith)  
Date: Sat, 14 Nov 2015 22:35:33 -0500  
Subject: [BoatAnchors] WD-40 vs CRC 3-36  
In-Reply-To: <564792B8.2050802@ix.netcom.com>  
References: <20151114193149.9JMM1.187964.root@cdptpa-web07>  
<564792B8.2050802@ix.netcom.com>  
Message-ID: <5647FD85.2060501@comcast.net>

Would WD-40 work on large exposed contacts that are well exposed to air such as a band switch on a transmitter or amplifier? Apply it in small amounts with a Q tip and then let it dry?  
breck k4che

On 11/14/2015 2:59 PM, Richard Knoppow via BoatAnchors wrote:  
> I don't know what is in the CRC product. WD-40 works quite well for  
> some things but should not be relied on for permanent lubrication and  
> is not a good contact cleaner since it leaves a residue. As a cleaner  
> it works fine and is a fairly effective penetrating oil although there  
> are much better ones.  
> If you use it for cleaning it should be rinsed off with a solvent  
> like Naphtha and where there are surfaces needing lubrication a  
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> cleaner and lubricant can be made by dissolving machine oil in  
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> typewriters. I use Kano Microil, a light machine oil of good quality  
> for lubricating and synthetic grease where a grease is needed. Kano  
> also makes an excellent penetrating oil.  
> WD-40 works well for its original purpose of displacing moisture.  
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>> BoatAnchors mailing list  
>> BoatAnchors at theporch.com  
>> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>>  
>

From k9fd at flex.com Sat Nov 14 23:21:02 2015  
From: k9fd at flex.com (Merv Schweigert)  
Date: Sat, 14 Nov 2015 18:21:02 -1000  
Subject: [BoatAnchors] QRV 426

In-Reply-To: <000f4244.684461e23618778d@ix.netcom.com>  
References: <000f4244.684461e23618778d@ix.netcom.com>  
Message-ID: <5648082E.2060504@flex.com>

Hearing KSM on 426kc 599 at 0409Z in Hawaii, KYVM ship on 425kc at 559 same time,  
Passing traffic, now KSM sending bulletin.

Merv K9FD/KH6 WH2XCR 475kc experimental

>  
>  
>  
>  
>  
>  
> Dave in Dallas. 0150Z.Hearing the UV NDB in Memphis, TN on 426.  
Listening.....  
> Sent from my ain't-so-smartphone.  
>  
>  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From kd5byb at gmail.com Sun Nov 15 09:24:25 2015  
From: kd5byb at gmail.com (Ben Hall)  
Date: Sun, 15 Nov 2015 08:24:25 -0600  
Subject: [BoatAnchors] Repair of connector with arc tracks WS19 115  
VACpower unit  
In-Reply-To: <56475675.6020506@kd5byb.net>  
References:  
<20151113070448.221753b8912a6762b1021bc254014d1d.9ba363be97.wbe@email06.secureserv  
er.net>  
<44E27321310745CCA4C106A5704892B6@KB6NAX> <56475675.6020506@kd5byb.net>  
Message-ID: <56489599.3030202@gmail.com>

Good morning all,

I completed repairs to the power supply late yesterday.

After routing out the carbon tracks with the Dremel, I filled in the hollows with clear epoxy. It leveled just about perfectly and because it is clear, if you only give it a quick glance, you won't see the repair.

After the epoxy was hard, I coated the insulating material in the connector with standard "home depot grade" satin polyurethane. (did not



have any WD40, was worried what the long-term effects of the WD40 might be with the epoxy, and wasn't going to wait for some real electrical varnish to arrive, plus the stuff is spendy!)

Just fired it up and all seems well. :)

For those not familiar with the WS19 Supply Unit No. 1, it is an unusual design on several accounts.

1) It has one transformer that contains everything. By that, I mean that transformer has all the voltage windings as well as the filter chokes inside the one can. It is L-shaped, which is odd.

2) The transformer has a voltage regulation scheme IIRC similar to a Sola line voltage regulator. Quoting from the manual:

"The input circuit comprises the primary winding L2 of the power transformer in series with control reactor L11. This circuit in combination with capacitor C4A connected across part of L4 winding of the transformer provides the voltage regulating feature of the unit. ...

The transformer is designed to operate on the knee of the saturation curve so that its inductance change with change in input voltage."

The L4 winding is the winding for the receiver's 265 VDC B+ supply.

The above voltage regulation feature makes power-up on a variac an interest proposition. As soon as the knob is part-way off zero volts, you get darn near full output (unloaded) on the power supply outputs.

3) The unit has a real reputation for being unreliable due to the 6X5 rectifiers. Apparently, the 6X5 tube has a reputation for shorting, and when they short in this supply, it takes windings with them. Because the power transformer is an "all in one" affair, replacement with something else is difficult.

The set uses four 6X5's - two in parallel to deliver the 120 mA required by the receiver, two in series to generate the 60 mA or high B+ needed by the PA. I've replaced them with four plug-in solid-state / dropping resistor diode units.

Thankfully, when I found this out, I had meters on all the outputs, or I most certainly would have exceeded a power supply filter cap rating.

Anyways, I'm going to call this one done for now. :)

thanks much and 73,  
ben, kd5byb

From gumbear at pacbell.net Sun Nov 15 10:50:10 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 15 Nov 2015 07:50:10 -0800  
Subject: [BoatAnchors] WD-40 vs CRC 3-36  
In-Reply-To: <5647FD85.2060501@comcast.net>  
References: <20151114193149.9JMM1.187964.root@cdptpa-web07>  
<564792B8.2050802@ix.netcom.com> <5647FD85.2060501@comcast.net>  
Message-ID: <5E354719AEC4CEDB8A21A8943586AFC@KB6NAX>

> Would WD-40 work on large exposed contacts that are well exposed to air  
such as a band switch on a transmitter or amplifier? Apply it in small  
amounts with a Q tip and then let it dry?  
breck k4che

WD40 is not good as an electrical contact restorer. It will coat the  
contact with a residue that will increase contact resistance to an  
unacceptable value upon drying. With high current flow or arcing across the  
contacts the residue will be baked or burned causing fouling of the  
contacts. A petroleum base contact grease would lubricate longer but would  
eventually produce the same problems. A contact cleaner/lube such as MG  
Chemicals Super Contact Cleaner which contains poly phenyl ether, a  
synthetic lubricant that does not burn in the presence of arcing, is what  
you should use. Poly phenyl ether has virtually zero vapor pressure and  
does not dry but instead dissipates through spreading over time. Delicate  
silver or gold plated contacts should always be maintained with proper  
lubrication. Removing a lubricant by using a "no residue" contact cleaner  
would lead to galling of the contact plating exposing the more corrosion  
susceptible base metal which is usually brass or copper alloy.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From hankvc at lostwells.net Sun Nov 15 12:49:14 2015  
From: hankvc at lostwells.net (hankvc at lostwells.net)  
Date: Sun, 15 Nov 2015 10:49:14 -0700 (MST)  
Subject: [BoatAnchors] WD-40 and other solvents  
Message-ID: <201511151749.tAFHnE87005711@julie.lostwells.net>

I've tried WD-40 on a few things vs. plain Stoddard Solvent and can't

see that there is any real difference between the two. I buy Stoddard Solvent in bulk (5-gallon tins) from a local source for my 3-gallon automotive parts washer, so have that available for anything else I can use it for.

Whatever else is in WD-40 besides Stoddard Solvent doesn't leave any protective residue or lubrication that I can see. WD-40 used to be a good starting fluid for diesels in cold weather, but I think that was mostly the propellant they used, and I think they've changed that. Fact in the matter is that I've got a tin of WD-40 that's maybe 10-15 years old and don't use it for much of anything.

For such things as circuit board contact fingers and Oak switch contacts, I use Caig Deoxit D-5, and have for maybe 20-30 years. Caig's product for potentiometers (used to be called "Faderlube," don't know what they're calling it now) works well on carbon track potentiometers, and I wouldn't think about using WD-40 in them.

For cleaning off sticky labels and residue, I use 3M Adhesive Remover.

For things like cleaning up and restoring connectors that have had flashover damage, I think I'd want to remove all traces of the flashover burn material and proceed from there. If the plastic is Bakelite, I'll finish with Lacquer Thinner and coat it with something like the GC coil varnish. To get a good shine on things like Bakelite pieces like knobs, I'll wash with a soap/ammonia/water solution, followed by Lacquer thinner, and finish with a brushing lacquer.

Hank

From 1oldlens1 at ix.netcom.com Sun Nov 15 13:28:31 2015

From: 1oldlens1 at ix.netcom.com (Richard Knoppow)

Date: Sun, 15 Nov 2015 10:28:31 -0800

Subject: [BoatAnchors] WD-40 and other solvents

In-Reply-To: <201511151749.tAFHnE87005711@julie.lostwells.net>

References: <201511151749.tAFHnE87005711@julie.lostwells.net>

Message-ID: <5648CECF.2030802@ix.netcom.com>

FWIW, I use Deoxit D-5. I have tested this on Bakelite terminal strips to see what effect it has on insulation. The tests were made with a high voltage leakage tester (General Radio) and a Hewlett-Packard 410-B, which is capable of reading very high resistance. After evaporating the D-5 had NO effect. I don't know what long-term problems it may cause with swelling but I have never encountered them. Nonetheless one can apply small amounts with a wooden toothpick or similar applicator. I found on some contacts, for instance the bandwidth switch on the SP-600 receiver, following it with a protective coating of

petroleum jelly such as Tuner Lub or plain Vaseline, will keep the contacts from becoming noisy again for a very long time. I have also used Deoxit Gold G-5. While Caig recommends this for use on gold plated contacts they also suggest it as a follow up to D-5 for long term protection. I have not tested it enough to determine how well it works.

I would definitely NOT use WD-40 as a contact cleaner or on potentiometers. For pots use Caig Faderlub which works very well and does not seem to damage the resistance elements. It also leaves a little lubrication behind.

On 11/15/2015 9:49 AM, Hank Van Cleef via BoatAnchors wrote:

> I've tried WD-40 on a few things vs. plain Stoddard Solvent and can't  
> see that there is any real difference between the two. I buy Stoddard  
> Solvent in bulk (5-gallon tins) from a local source for my 3-gallon  
> automotive parts washer, so have that available for anything else I can  
> use it for.

>

> Whatever else is in WD-40 besides Stoddard Solvent doesn't leave any  
> protective residue or lubrication that I can see. WD-40 used to be a  
> good starting fluid for diesels in cold weather, but I think that was  
> mostly the propellant they used, and I think they've changed that. Fact  
> in the matter is that I've got a tin of WD-40 that's maybe 10-15 years  
> old and don't use it for much of anything.

>

> For such things as circuit board contact fingers and Oak switch  
> contacts, I use Caig Deoxit D-5, and have for maybe 20-30 years. Caig's  
> product for potentiometers (used to be called "Faderlube," don't know  
> what they're calling it now) works well on carbon track potentiometers,  
> and I wouldn't think about using WD-40 in them.

>

> For cleaning off sticky labels and residue, I use 3M Adhesive Remover.

>

> For things like cleaning up and restoring connectors that have had  
> flashover damage, I think I'd want to remove all traces of the flashover  
> burn material and proceed from there. If the plastic is Bakelite, I'll  
> finish with Lacquer Thinner and coat it with something like the GC coil  
> varnish. To get a good shine on things like Bakelite pieces like knobs,  
> I'll wash with a soap/ammonia/water solution, followed by Lacquer  
> thinner, and finish with a brushing lacquer.

>

> Hank

>

> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From whitebear1122 at comcast.net Sun Nov 15 15:03:50 2015  
From: whitebear1122 at comcast.net (Whitebear1122)  
Date: Sun, 15 Nov 2015 14:03:50 -0600  
Subject: [BoatAnchors] Collins Forums?  
In-Reply-To: <CAB+LbZBtWmk6VP5WkkeR5xo-Dj4hP3abbVQZexVyeza-7+F89A@mail.gmail.com>  
References: <CAB+LbZBtWmk6VP5WkkeR5xo-Dj4hP3abbVQZexVyeza-7+F89A@mail.gmail.com>  
Message-ID: <04DB43B5-CD3A-4039-B5A5-092ADDCF87AC@comcast.net>

Hi Jim, Congratulations on winning the cancer battle!!! Glad to hear you're back on the air. Yes there are two Collins lists, The Collins Collectors association, go to the CCA website at [www.collinsradio.com](http://www.collinsradio.com) and sign up

and the Collins Radio Association, at [www.collinsra.org](http://www.collinsra.org)

Both are pretty quiet these days. While I don't post much either, I still enjoy using my S-Line all the time. You can see a picture of it on my [qrz.com](http://qrz.com) page.

73, Scott WA9WFA in Saint Paul MN

From gumbear at pacbell.net Sun Nov 15 16:05:33 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 15 Nov 2015 13:05:33 -0800  
Subject: [BoatAnchors] What's in WD40 (repeat)  
Message-ID: <0F28AC6B1DD44680A32C53187A19A7AA@KB6NAX>

WD-40 has been raked over the coals here many times before which also proved it's flammable Here's what its MSDS discloses:

From: [www.wd40company.com/files/pdf/msds-wd494716385.pdf](http://www.wd40company.com/files/pdf/msds-wd494716385.pdf)

### 3 - Composition/Information on Ingredients

Ingredient

CAS #

Weight Percent

Aliphatic Hydrocarbon

64742-47-8

45-50% by wt.

Petroleum Base Oil

64742-58-1

64742-53-6  
64742-56-9  
64742-65-0  
<25% by wt.  
LVP Aliphatic Hydrocarbon  
64742-47-8  
12-18% by wt.  
Carbon Dioxide  
124-38-9  
2-3% by wt.  
Non-Hazardous Ingredients  
Mixture  
<10% by wt.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From gumbear at pacbell.net Sun Nov 15 16:59:58 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 15 Nov 2015 13:59:58 -0800  
Subject: [BoatAnchors] insulator tracking  
Message-ID: <0E2FAB31C43940788F2ACDF3E4A064A5@KB6NAX>

If you want expert testimony on the subject I recommend the following IEEE document:

<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5322267&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel5%2F5308791%2F5321240%2F05322267.pdf%3Farnumber%3D5322267>

The explanation in the preview should suffice to explain the basic cause of tracking damage to insulators.

With regard to WD40 being applied to insulation (BTW I don't own WD40 stock): As the IEEE article reveals tracking is the result of combustion of foreign matter and organic insulation material initiated by minute sparking across breaks in a leakage path between voltage polarized electrical terminals. Leakage paths are either through the body of an insulator or across the insulator's surface. Surface leakage occurs from the combination of accumulated dirt and ever present moisture in the air that precipitates into the dirt creating a semi-conductive sludge. As sparking occurs dirt and insulation is carbonized which reinforces the process of insulation destruction leading to the development of a carbon track.

Increasing leakage raises the temperature of the leakage path thus accelerating combustion. Eventually leakage increases to the point of tripping circuit breakers or if the circuit is not over current protected an insulator can be caused to literally explode in flames. We know where moisture comes from but we don't always recognize where the contaminants come from. In this modern age of industry caused air pollution one only has to do a histopathological study a deceased person's lung tissue to learn what our radios live in all of our lives. Soot, which is impure carbon, is a primary air pollutant which along with many other pollutants is attracted to electrically charged surfaces. So where does WD40 come into the discussion? Oil repels moisture. Refined oil is a good insulator. Dirt particles immersed in oil are prevented from contributing to ionic conduction mechanisms in the absence of moisture. A good example of that is automobile engines that are covered in oily dirt: They don't get rusty!

Arden Allen  
KB6NAX

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hard also in his dealings with men.  
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his treatment of animals.  
-Immanuel Kant

From 1oldlens1 at ix.netcom.com Sun Nov 15 17:28:55 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Sun, 15 Nov 2015 14:28:55 -0800  
Subject: [BoatAnchors] What's in WD40 (repeat)  
In-Reply-To: <0F28AC6B1DD44680A32C53187A19A7AA@KB6NAX>  
References: <0F28AC6B1DD44680A32C53187A19A7AA@KB6NAX>  
Message-ID: <56490727.8000101@ix.netcom.com>

I think it is the nature of the oil used. I followed each of the cas numbers at some point. I am going by memory but at least of the oil may be such as to leave a wax with time. I don't think WD- 40 is as bad as presented by some but is still not an optimum lubricant.

On 11/15/2015 1:05 PM, Arden Allen via BoatAnchors wrote:

> WD-40 has been raked over the coals here many times before which also proved it?  
s flammable Here's what its MSDS discloses:

>

> From: [www.wd40company.com/files/pdf/msds-wd494716385.pdf](http://www.wd40company.com/files/pdf/msds-wd494716385.pdf)

>

> 3 - Composition/Information on Ingredients

> Ingredient

> CAS #

> Weight Percent

> Aliphatic Hydrocarbon

> 64742-47-8

> 45-50% by wt.  
> Petroleum Base Oil  
> 64742-58-1  
> 64742-53-6  
> 64742-56-9  
> 64742-65-0  
> <25% by wt.  
> LVP Aliphatic Hydrocarbon  
> 64742-47-8  
> 12-18% by wt.  
> Carbon Dioxide  
> 124-38-9  
> 2-3% by wt.  
> Non-Hazardous Ingredients  
> Mixture  
> <10% by wt.  
>  
> Arden Allen  
> KB6NAX  
>  
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>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From 1oldlens1 at ix.netcom.com Sun Nov 15 17:33:47 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Sun, 15 Nov 2015 14:33:47 -0800  
Subject: [BoatAnchors] insulator tracking  
In-Reply-To: <0E2FAB31C43940788F2ACDF3E4A064A5@KB6NAX>  
References: <0E2FAB31C43940788F2ACDF3E4A064A5@KB6NAX>  
Message-ID: <5649084B.6000107@ix.netcom.com>

I will repeat my Deoxit test using WD-40. I have none right now but will get some. The test is to spray some on an insulator, let it set up and measure the resistance using a meter capable of measuring very high



resistance. I have two such, one works at 500 volts the other at a fraction of a volt. The idea is to clean the insulator first and make sure there is no residue on it. Then measure it. Then spray it with whatever is being tested and either wait for it to dry or to partially evaporate, then measure again. I suspect WD- 40 is not a conductor.

On 11/15/2015 1:59 PM, Arden Allen via BoatAnchors wrote:

> If you want expert testimony on the subject I recommend the following IEEE document:

>

> [http://ieeexplore.ieee.org/xpl/login.jsp?](http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5322267&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel5%2F5308791%2F5321240%2F05322267.pdf%3Farnumber%3D5322267)

[tp=&arnumber=5322267&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel5%2F5308791%2F5321240%2F05322267.pdf%3Farnumber%3D5322267](http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5322267&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel5%2F5308791%2F5321240%2F05322267.pdf%3Farnumber%3D5322267)

>

> The explanation in the preview should suffice to explain the basic cause of tracking damage to insulators.

>

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>

> Arden Allen

> KB6NAX

>

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> hard also in his dealings with men.

> We can judge the heart of a man by

> his treatment of animals.

> ?Immanuel Kant

> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From gumbear at pacbell.net Sun Nov 15 22:14:16 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 15 Nov 2015 19:14:16 -0800  
Subject: [BoatAnchors] insulator tracking  
In-Reply-To: <5649084B.6000107@ix.netcom.com>  
References: <0E2FAB31C43940788F2ACDF3E4A064A5@KB6NAX>  
<5649084B.6000107@ix.netcom.com>  
Message-ID: <747AAD3706B14E44AC3174B53B9CB535@KB6NAX>

> .....I suspect WD- 40 is not a conductor. ....

Your suspicion is correct. WD40 was originally advertised to be used on electrical equipment, "electric motors" being on the can. Some years ago that assertion was dropped from the can and their ads. Probably because their lawyers defended a suit brought by someone who sprayed WD40 on arcing or red hot equipment and set his house afire.

Arden Allen  
KB6NAX

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?Immanuel Kant

From WA5CAB at cs.com Mon Nov 16 00:53:42 2015  
From: WA5CAB at cs.com (WA5CAB at cs.com)  
Date: Mon, 16 Nov 2015 00:53:42 -0500  
Subject: [BoatAnchors] insulator tracking  
Message-ID: <8e62f.6ff40bde.437ac966@cs.com>

Yes, even at quite high voltages (above 10 KV). It is quite safe to spray the outside and inside of a distributor cap with WD-40 after a down-out,

shake it off, put it back on the distributor, and immediately start the engine. I have had to do it several times. But don't try that with gasoline.

Robert Downs - Houston  
wa5cab dot com (Web Store)  
MVPA 9480

In a message dated 11/15/2015 21:16:59 PM Central Standard Time,  
boatanchors at theporch.com writes:

> >.....I suspect WD- 40 is not a conductor. ....  
>  
> Your suspicion is correct. WD40 was originally advertised to be used on  
> electrical equipment, "electric motors" being on the can. Some years ago  
> that assertion was dropped from the can and their ads. Probably because  
> their lawyers defended a suit brought by someone who sprayed WD40 on  
> arcing  
> or red hot equipment and set his house afire.  
>  
> Arden Allen  
> KB6NAX

From gumbear at pacbell.net Mon Nov 16 01:39:44 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sun, 15 Nov 2015 22:39:44 -0800  
Subject: [BoatAnchors] [ARC5] OT: Hally Instability  
Message-ID: <EBB42015428542C8A800F6748FA73BB2@KB6NAX>

> .....Has anyone ever tried to determine the source  
of this mechanical instability? Cheap tuning cap?  
L0 coils mounted by their wires on the band switch? .....

All of the above, I'd say. Think of the chassis as a kettle drum skin. As it vibrates it changes planarity. The parts mounted on the chassis move to and fro with respect to each other. As you go up in frequency the resonant frequency of the tuned circuit is more heavily dependent on contributed stray capacitance which varies with vibration causing FM'ing of the L0. Take a sturdy non conductive probe like a wooden cooking spoon handle and flex the chassis at various points to see how much FM'ing you get.

An analogy is you can't make a silk purse out of a pig's ear.

Arden Allen  
KB6NAX

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his treatment of animals.  
?Immanuel Kant

From rbsingl at ilstu.edu Mon Nov 16 05:58:23 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Mon, 16 Nov 2015 10:58:23 +0000  
Subject: [BoatAnchors] insulator tracking  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD3230089FF@ISUEMBX02.ad.ilstu.edu>

Arden and group,

Several years ago I was at a hamfest and there was a melted Radio Shack/Realistic DX-302 receiver with a sign that read, "Ask me how this happened" so I did. The owner's workbench was in his basement and the DX-302 was sitting on the floor awaiting attention. While he was working on another project he bumped into an aerosol can of WD-40 which fell to the floor jamming the spray nozzle on turning it into a self-propelled can of WD-40 that went rolling across the floor under its own power. When it got near his gas fired water heater it self-ignited from the pilot and continuing now as a self-propelled flame thrower and lodged against the DX-302 showering it with flames before he extinguished it and the whole process only took a few seconds.

A few years later my well driller friends told me one of their customers decided to clean his well pressure switch by removing the cover and spraying it with WD-40 and putting the cover back in place. When the well breaker was turned on at the end of the pump cycle the arc from the opening switch contacts ignited the fumes still present inside the switch housing and launched the cover which barely missed the owner according to his story.

My first diesel was a 6.5 turbo in a 1995 GMC truck and unofficially WD-40 was supposed to be a fairly safe starting fluid for this glow plug equipped engine but I never had to try it.

Rodger

Dr. Rodger B. Singley  
Professor of Marketing

> -----Original Message-----  
> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf  
> Of Arden Allen via BoatAnchors

From anchor at ec.rr.com Mon Nov 16 15:27:33 2015  
From: anchor at ec.rr.com (Al Parker)  
Date: Mon, 16 Nov 2015 15:27:33 -0500

Subject: [BoatAnchors] Jones plug pinout?  
Message-ID: <564A3C35.7080000@ec.rr.com>

Hi folks,

I've got a 10-pin Jones flat pin plug in the HT-32 xmtr, to the sideband generator. I can find a diagram of the physical pinout of the connector, if there is any convention. The HT-32 schematic diagram shows pin no.s, but the visible surfaces on the plug and socket don't show any numbers.

You can see the connector if you google "CINCH P-310-CCT Rectangular Power Connector" but Cinch catalogs don't show me any pinout help, nor do any suppliers, e.g. Mouser, Digikey, etc.

I need to trace out some mods by a DPO, with new wires to the connector, and some cut. Lotsa fun.

Any help greatly appreciated.

tnx, 73,

Al, W8UT  
[www.boatanchors.org](http://www.boatanchors.org)  
[www.hammarlund.info](http://www.hammarlund.info)

"There is nothing -- absolutely nothing -- half so much  
worth doing as simply messing about in boats"  
Ratty, to Mole

From anchor at ec.rr.com Mon Nov 16 15:36:02 2015  
From: anchor at ec.rr.com (Al Parker)  
Date: Mon, 16 Nov 2015 15:36:02 -0500  
Subject: [BoatAnchors] Jones plug pinout?  
In-Reply-To: <564A3C35.7080000@ec.rr.com>  
References: <564A3C35.7080000@ec.rr.com>  
Message-ID: <564A3E32.503@ec.rr.com>

should have proofread better -- I "CAN'T" find any diagram of pinout.  
tnx,  
Al

From navy.radio at gmail.com Mon Nov 16 15:40:07 2015  
From: navy.radio at gmail.com (Nick England)  
Date: Mon, 16 Nov 2015 15:40:07 -0500  
Subject: [BoatAnchors] Jones plug pinout?  
In-Reply-To: <564A3C35.7080000@ec.rr.com>  
References: <564A3C35.7080000@ec.rr.com>  
Message-ID: <CAB55hNeC7tYNL3j=NhF7QReNXR08m6YS-Psy2+YAmo=j4XfwRw@mail.gmail.com>

Google

digikey molex-catalog-beau-connectors.pdf

Nick England K4NYW  
www.navy-radio.com

On Mon, Nov 16, 2015 at 3:27 PM, Al Parker via BoatAnchors <  
boatanchors@theporch.com> wrote:

```
> Hi folks,  
> I've got a 10-pin Jones flat pin plug in the HT-32 xmtr, to the  
> sideband generator. I can find a diagram of the physical pinout of the  
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> "There is nothing -- absolutely nothing -- half so much  
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> -----  
> BoatAnchors mailing list  
> BoatAnchors@theporch.com  
> https://minime.theporch.com/mailman/listinfo/boatanchors  
>
```

From anchor at ec.rr.com Mon Nov 16 15:46:45 2015  
From: anchor at ec.rr.com (Al Parker)  
Date: Mon, 16 Nov 2015 15:46:45 -0500  
Subject: [BoatAnchors] Jones plug pinout?  
In-Reply-To: <CAB55hNeC7tYNL3j=NhF7QReNXR08m6YS-Psy2+YAmo=j4XfwRw@mail.gmail.com>  
References: <564A3C35.70800000@ec.rr.com>  
<CAB55hNeC7tYNL3j=NhF7QReNXR08m6YS-Psy2+YAmo=j4XfwRw@mail.gmail.com>  
Message-ID: <564A40B5.7020905@ec.rr.com>

Thanks Nick,

Just what I need, right on pg 2. I looked at several data sheets and Cinch catalogs, didn't see this one.

Missed you at Benson ystdy, I think JP and/or JB mentioned you were there. I only bought some filter caps, did sell a bit of edebris and KWM-2.73,

Al

On 11/16/2015 3:40 PM, Nick England wrote:

> digikey molex-catalog-beau-connectors.pdf

From gumbear at pacbell.net Mon Nov 16 17:15:53 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Mon, 16 Nov 2015 14:15:53 -0800

Subject: [BoatAnchors] insulator tracking

In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD3230089FF@ISUEMBX02.ad.ilstu.edu>

References: <0DEBF1C8D8437248BE53CD4213B89BD3230089FF@ISUEMBX02.ad.ilstu.edu>

Message-ID: <F72FFF276DD9416388F6E2F703519FC0@KB6NAX>

> .....When it got near his gas fired water heater it self-ignited from  
> the pilot .....

> .....the arc from the opening switch contacts ignited the fumes still  
> present inside the switch housing .....

Roger, everyone among us that has learned elementary fire fighting remembers the fire triangle - a fire occurs when oxygen, fuel and heat come together. But the finer point is that what is burning is not the fuel but the \*\*\*fuel vapor\*\*\*. Anyone who lets a fuel vapor reside next to an ignition source should be trained in first aid for self and others. Good fire insurance also.

Arden Allen

KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From knjhanlon at msn.com Mon Nov 16 17:27:30 2015

From: knjhanlon at msn.com (JAMES HANLON)

Date: Mon, 16 Nov 2015 15:27:30 -0700

Subject: [BoatAnchors] WD-40 & Telephone Switching Gear

Message-ID: <BLU184-W57A5CDC142B51368612A4DA01E0@phx.gbl>

A good while ago, I think in the 1970 to 1990 time frame, Homestead Air Force Base suffered a hurricane which flooded out its telephone exchange. The telephone

switching equipment was of the "Crossbar" type, an electromechanical switch in which two perpendicular bars operate to close a switch crosspoint. The repair folks from across the Bell System (those were the days) descended on the exchange and sprayed it down with WD-40. The WD-40 did indeed displace a lot of water from the switches and they started working again. However, several months later as the more volatile portions of the WD-40 evaporated, the remaining material gummed up the switches, both the operating mechanisms and the contacts. The switches were not recoverable and had to be replaced.

That's why I do not recommend using WD-40 as a lubricant for electrical connectors or relays. I do, however, squirt it into the padlock on my gate in the winter time when it tends to fill up with water and then freeze.

Jim Hanlon, W8KGI, ex Bell Labs, Electromechanical Switching Apparatus Laboratory Engineer.

From infomet at embarqmail.com Mon Nov 16 17:42:13 2015  
From: infomet at embarqmail.com (Wilson)  
Date: Mon, 16 Nov 2015 17:42:13 -0500  
Subject: [BoatAnchors] Jones plug pinout?  
In-Reply-To: <564A3C35.7080000@ec.rr.com>  
References: <564A3C35.7080000@ec.rr.com>  
Message-ID: <E76B0F46EA054AE38AD5EDFF1E7DA767@WilsonPC>

Page down and you'll find layouts.

WL

<http://www.farnell.com/datasheets/678856.pdf>

-----Original Message-----

From: Al Parker

Sent: Monday, November 16, 2015 3:27 PM

To: boatanchors at theporch.com

Subject: [BoatAnchors] Jones plug pinout?

Hi folks,

I've got a 10-pin Jones flat pin plug in the HT-32 xmtr, to the sideband generator. I can find a diagram of the physical pinout of the connector, if there is any convention. The HT-32 schematic diagram shows pin no.s, but the visible surfaces on the plug and socket don't show any numbers.

You can see the connector if you google "CINCH P-310-CCT Rectangular Power Connector" but Cinch catalogs don't show me any pinout help, nor do any suppliers, e.g. Mouser, Digikey, etc.

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Any help greatly appreciated.

tnx, 73,



Al, W8UT  
www.boatanchors.org  
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much  
worth doing as simply messing about in boats"  
Ratty, to Mole

From gsantacana at gmail.com Mon Nov 16 19:44:07 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Mon, 16 Nov 2015 20:44:07 -0400  
Subject: [BoatAnchors] WD-40 & Telephone Switching Gear  
In-Reply-To: <BLU184-W57A5CDC142B51368612A4DA01E0@phx.gbl>  
References: <BLU184-W57A5CDC142B51368612A4DA01E0@phx.gbl>  
Message-ID: <CA01yix2T6rn=pBMejy05D5GYBSqUXNbcyFQdBFG4uoo5-DYzHA@mail.gmail.com>

That was Hurricane Andrew in 1992, the most destructive hurricane in the US till then. WD-40 was designed mainly as a water displacement lubricant and no more. I remember spraying it all over an outboard motor after every boat trip. It kept the motor from corrosion but eventually started to gum up. In those times I used it in contact switches with some success but after seeing what happened in that outboard I went back to normal quick dry contact cleaners or deoxit 5. WD-40 now sells more products including a corrosion inhibitor in a small can that is supposed to protect for a year. About carbon arcing in switches, the worst I have seen was in a Halli SX110 bandswitch. The RF section had a nice carbon pathway to ground. The former owner decided to bypass the section and only use the radio for MW monitoring. Since this was a rescue mission, I found a "new" RF section and replaced it. Since then the SX110 sits on one of the shelves and works in all bands . It also looks like a proper SW set.

Best 73s

Guido Santacana KP4FAR

On Mon, Nov 16, 2015 at 6:27 PM, JAMES HANLON via BoatAnchors <boatanchors at theporch.com> wrote:

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> Force Base suffered a hurricane which flooded out its telephone exchange.  
> The telephone switching equipment was of the "Crossbar" type, an  
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> Jim Hanlon, W8KGI, ex Bell Labs, Electromechanical Switching Apparatus  
> Laboratory Engineer.  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

From wb0eq at yahoo.com Mon Nov 16 19:48:24 2015  
From: wb0eq at yahoo.com (John Sehring)  
Date: Tue, 17 Nov 2015 00:48:24 +0000 (UTC)  
Subject: [BoatAnchors] Ancient meter calibration  
References: <782496312.6221380.1447721304803.JavaMail.yahoo.ref@mail.yahoo.com>  
Message-ID: <782496312.6221380.1447721304803.JavaMail.yahoo@mail.yahoo.com>

Howdy,

Awhile ago I mentioned my find of a Daven ME-6D/U AC voltmeter, from 1965, just like the one I used in the Air Force as a kid avionics tech. Its range is 0.005 V full scale to 500 V, freq response 15 Hz - 250 kHz, has an adjustable, frequency-compensated attenuator. Three voltage amps, 5789, 6AH6, 6AH6, drive a 6AL5 dual diode and then the meter. Yes, the latter tube has a 3.9 ohm resistor in it's filament circuit to foil spurious emissions.

This meter has that fascinating (to me anyway) shaded pole meter magnet structure which yields a dB-linear reading. I.e. the scale is cal'd in dB which are equal steps apart from each other, from top to bottom of the scale So the zero position is "below" zero, to the left, out of sight. (I see this kind of meter on Ballantine sensitive AC voltmeters as well. Do you know of any others?)

The meter is working just lovely so decided to calibrate it.

Following the maintenance manual faithfully, I found the meter indications before cal were only about 10-15% off! (I use Fluke-cal'd Fluke gear to do this). I think that's amazing for 50 years. Of course this is MIL-spec built, just beautiful. No even dust inside thanks to rubber seals in the case--still vy soft

& pliable. Ah, our tax dollars at work (or not?).

All the cal pots finished up at around their mid-line position when done so all seems in order, i.e. no stage is seriously out of whack.

One interesting test specified is to measure the amount of AC feedback present. AC feedback linearizes amplification and shapes frequency response of the amps. It takes some of the AC output and feeds it back to the cathode of the first amp.

For testing, the AC loop is temporarily disabled with a jumper. The increase in meter reading is noted & then compared with the reading using normal feedback.

Spec wants a 26 dB increase in meter reading with AC feedback disabled but a low limit of 10 dB is pronounced as the edge of OK, which is what I found on mine. Yes, feedback reduces the amount of amp gain, that's how it works its magic, and what's left is much purer.

Manual says it is normal for the amount of AC feedback to decline with tube aging.

I rechecked tubes and several are marginal in the transconductance department but otherwise OK. Yes, the US Navy says "use a transconductance tube tester"!

Also suggested is going thru the unit stage by stage with an o'scope, using sine wave signal inputs applied & looking for distortion of waveform. (Meter has a handy 1/4" phone jack & output level control for o'scope connection.) Distortion of signal by the meter amps will throw off the cal. as this is a sine-wave, RMS-reader (no, not true RMS).

I can see the effect of the low feedback numbers when looking at meter output on the o-scope, with input signals somewhat above max, some one-sided positive-side clipping shows up from amp overload.

I've never seen these kinds of tests spec'd for a sensitive AC voltmeter before. Learned sum!

Meter power supply circuit is different as well. There is a ton of electrolytic cap filtering done on the many B+ feeds. They are all in great shape as B+ ripple is tiny & so residual hum is zilch.

Unit also has a hum bucking control across all (in parallel with) of the 6.3 V heaters. Its resistance is relatively low, 100 ohms, so heater line is relatively heavily loaded.

Also present is an 0A2 voltage regulator tube. It of course insures the stability of calibration & general performance.

Now, in series with the primary of the AC power transformer, is a current

regulator Amperite type 2A12; it's glass with an octal base.

(I've not seen exactly such an arrangement before. In my National NC-303 for example there's a 4H4 current regulator in series with it's HF oscillator 6.3 V filament.)

Further, there's a 5K / 10W adjustable power resistor across the transformer primary. It's to be set for a specified amount of primary AC current (195 mA) at a specified input voltage; in this case, at the meter's minimum which is 105 V.

I think they want to set an upper limit of AC current thru the 2A12 at the meter's maximum AC input voltage of 127 V AC. Amperite specs it at 12 Watts.

It's also possible to optimally run the regulating device in the linear current-regulating part of its curve. See: [www.labguysworld.com/AMPERITE\\_BALLAST\\_TUBES.pdf](http://www.labguysworld.com/AMPERITE_BALLAST_TUBES.pdf)

Figs. 1 & 1A.

As this meter is a U.S. Navy spec'd device, I'm sure it would be operated shipboard where lots of power line-voltage variations might occur. Any experience with this out there?

I will put the meter back on a Variac and watch what happens when I twist the big knob.

In my land-based U.S. Air Force environment, the base made its own carefully run 115 V, 400 Hz juice.

P.S. Since I'm on a voltmeter roll, I think I'll take a walk-about thru my Ballantine 400H AC VM. It's not MIL-spec but very high quality build a la Hewlett-Packard.

Thanks for listening! See you on the radio.

--John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

From 1oldlens1 at ix.netcom.com Mon Nov 16 20:10:37 2015

From: 1oldlens1 at ix.netcom.com (Richard Knoppow)

Date: Mon, 16 Nov 2015 17:10:37 -0800

Subject: [BoatAnchors] Ancient meter calibration

In-Reply-To: <782496312.6221380.1447721304803.JavaMail.yahoo@mail.yahoo.com>

References: <782496312.6221380.1447721304803.JavaMail.yahoo.ref@mail.yahoo.com>

<782496312.6221380.1447721304803.JavaMail.yahoo@mail.yahoo.com>

Message-ID: <564A7E8D.6000506@ix.netcom.com>

FWIW the magnet structure of the original VU meter was shaped to give an approximately linear Db scale. I think some receivers have S meters with shaped magnets.

On 11/16/2015 4:48 PM, John Sehring via BoatAnchors wrote:

> Howdy,

>

>

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>  
> In my land-based U.S. Air Force environment, the base made its own carefully run  
115 V, 400 Hz juice.  
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>  
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Ballantine 400H AC VM. It's not MIL-spec but very high quality build a la  
Hewlett-Packard.  
>  
> Thanks for listening! See you on the radio.  
>  
>  
> --John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>  
  
--  
Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From dave at horsfall.org Wed Nov 18 03:30:57 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Wed, 18 Nov 2015 19:30:57 +1100 (EST)  
Subject: [BoatAnchors] WD-40 & Telephone Switching Gear  
In-Reply-To: <BLU184-W57A5CDC142B51368612A4DA01E0@phx.gbl>  
References: <BLU184-W57A5CDC142B51368612A4DA01E0@phx.gbl>  
Message-ID: <alpine.BSF.2.11.1511181913310.10489@aneurin.horsfall.org>

On Mon, 16 Nov 2015, JAMES HANLON via BoatAnchors wrote:

> That's why I do not recommend using WD-40 as a lubricant for electrical  
> connectors or relays. I do, however, squirt it into the padlock on my  
> gate in the winter time when it tends to fill up with water and then

> freeze.

I guess it's time for me to tell my story.

Back in the 80s, I was Broadcast Officer and Station Engineer for the Wireless Institute of Australia (NSW Division) broadcast station VK2WI.

It was late at night, close to the deadline whilst tap-tap-tapping away on my olde Microbee computer (a CP/M box), when a key failed. Now, you have to understand that Microbee keys constantly fail, which is why I had a bag full of 'em later on, but I get ahead of myself.

With deadline looming, I did a silly thing and sprayed the recalcitrant key with the only thing to hand, viz: WD-40...

Shortly afterwards, the adjacent keys failed.

Panic! I dug up some Veroboard(tm), found some PCB switches and some ribbon cable, and soldered the lot into the keyboard where the ex-keys should've been.

I think I got to bed at around 0400, for an 0600 start.

Moral: Never, ever, use WD-40 on switch contacts. The WD in WD-40 means "Water Displacement", and nothing else.

And yes, it used to start car engines on a cold day (a shot right down the carburettor throat) or to "fix" a drowned distributor.

Sigh...

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From thompson at mindspring.com Wed Nov 18 16:01:08 2015  
From: thompson at mindspring.com (Dave Thompson)  
Date: Wed, 18 Nov 2015 16:01:08 -0500 (GMT-05:00)  
Subject: [BoatAnchors] WD-40 and other solvents  
Message-ID: <23255977.1447880469119.JavaMail.root@mswamui-billy.atl.sa.earthlink.net>

Jack,

This is a test to see if sending it directly from earthlink may solve the bounce problem.



73 Dave K4JRB

From arc5 at ix.netcom.com Fri Nov 20 06:30:02 2015  
From: arc5 at ix.netcom.com (David Stinson)  
Date: Fri, 20 Nov 2015 05:30:02 -0600  
Subject: [BoatAnchors] Mystery Amplifier  
Message-ID: <BCB63DDF21834D6A913FFD076A263708@DaddyPC>

Anyone ever seen an amp like this one?  
Know what it is?

<http://phoenix.craigslist.org/ev1/ele/5321558657.html>

From gsantacana at gmail.com Sun Nov 22 15:23:17 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Sun, 22 Nov 2015 16:23:17 -0400  
Subject: [BoatAnchors] GPR-90 Report  
Message-ID: <0ED422BE-6463-4C47-A991-24C07AB0233E@gmail.com>

Gents,

The GPR-90 hum issue has been resolved. The problem was caused by a combination of a bad 6V6 and its cathode bypass cap. When I did some minor recapping in the set 7 years ago this particular cap tested Ok. Apparently as the cap deteriorated the tube suffered the consequences. A new cap and tube and problem resolved. I took the opportunity to do some tweaking, switch and pot cleaning and a general cleanup.

Thanks to all those that helped me get on the right track. Next in line and for Xmas is the RBC. It has been with me for 30+ years, picked up from the curbside after being trashed by someone power supply and all. It was partially recapped with lots of mica looking paper micamolds. Since then it has been working well but it needs TLC now.

Best 73s

Guido Santacana KP4FAR

Sent from my iPad

From 1oldlens1 at ix.netcom.com Sun Nov 22 16:18:45 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Sun, 22 Nov 2015 13:18:45 -0800  
Subject: [BoatAnchors] GPR-90 Report  
In-Reply-To: <0ED422BE-6463-4C47-A991-24C07AB0233E@gmail.com>

References: <0ED422BE-6463-4C47-A991-24C07AB0233E@gmail.com>

Message-ID: <56523135.20709@ix.netcom.com>

I am very curious about this receiver. First you say it was tossed complete with power supply, was the supply a separate item? The PS for the GPR-90 is integral with the receiver. Secondly, AFAIK, there are no paper caps in the set, all capacitors are ceramic, mica, or electrolytic. I see one on the parts list described as a "molded plastic" cap but its specs suggest an electrolytic. AFAIK, Micamold discontinued its molded paper caps long before the GPR-90 was built. Micamold flat paper caps and similar caps made by Solar and others, seem to have been popular during WW-2 when mica was in short supply. My AR-88 had a number of them, all bad.

I think the GPR-90 is an under rated receiver TMC did some odd things in its design. I am not sure who they were competing with. The receiver was considerably less expensive than the Hammarlund SP-600-JX or Collins 51J series but used in some similar multi-receiver rigs. I will be very interested in how this one performs after you work it over.

On 11/22/2015 12:23 PM, Guido Santacana via BoatAnchors wrote:

> Gents,

>

> The GPR-90 hum issue has been resolved. The problem was caused by a combination of a bad 6V6 and its cathode bypass cap. When I did some minor recapping in the set 7 years ago this particular cap tested Ok. Apparently as the cap deteriorated the tube suffered the consequences. A new cap and tube and problem resolved. I took the opportunity to do some tweaking, switch and pot cleaning and a general cleanup.

>

> Thanks to all those that helped me get on the right track. Next in line and for Xmas is the RBC. It has been with me for 30+ years, picked up from the curbside after being trashed by someone power supply and all. It was partially recapped with lots of mica looking paper micamolds. Since then it has been working well but it needs TLC now.

>

> Best 73s

>

> Guido Santacana KP4FAR

>

> Sent from my iPad

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From rbsingl at ilstu.edu Sun Nov 22 17:45:26 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Sun, 22 Nov 2015 22:45:26 +0000  
Subject: [BoatAnchors] GPR-90 Report  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD3230097D6@ISUEMBX02.ad.ilstu.edu>

I have a GPR-90 and the follow-up GPR-92 and they are some of the most attractive receivers of the era and have a very nice tuning feel. The only complaint I have with the GPR-90 is the BFO will try to sync lock with stronger CW signals dropping the beat note to near zero; this can be addressed by reducing coupling from the BFO. The GPR-92 has one annoying characteristic to me and that is its IF selectivity shape factor. It has selectable bandwidth in 6 steps from .5 Khz to 15 Khz. @-6db but at -60db the narrow selection is over 23 Khz. wide while the others cluster around the 27 Khz. wide range @-60db so you experience a lot of interference from strong signals even fairly far away from your operating frequency. The GPR-90 doesn't have the selectivity of good mechanical or crystal lattice filter equipped receivers but it has a superior shape factor to the 92 with the narrow choices around 7 to 8 Khz. wide @-60db instead of 23 Khz. There is a note in the GPR-92 introductory brochure that indicates it can be used with a SBC-2 "demultiplexing SSB converter" offering 4 voice channels or 64 RTTY channels and the ability to accommodate this converter may be the reason for its IF characteristics.

Although the GPR-92 has a product detector I have a second GSB-1 SSB adapter paired with it to provide better selectivity when needed. Actually the Hammarlund HC-10 is my favorite of the external SSB adapters (it is basically the final IF/detector/AGC/audio section of a HQ-170/180 receiver) and I used one with my GPR-90 for several years but the GSB-1 does look better with the TMC receivers. The GSB-1 is sort of the opposite of the GPR-92 shape factor with bandwidth of 2.5 Khz @ -6db and 3.5 Khz. @ -50db from its 17 Khz. IF and for AM operation it is necessary to use it in SSB mode otherwise tuning where there is sufficient carrier for proper AM demodulation results in very limited frequency response.

If I wasn't so averse to modifying gear I would add a mechanical filter adapter to my GPR-92 in order to improve selectivity and TMC did make a crystal filter adapter but I have never found any detailed information about that option.

Rodger WQ9E

Dr. Rodger B. Singley  
Professor of Marketing

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf  
> Of Richard Knoppow via BoatAnchors

From gsantacana at gmail.com Sun Nov 22 19:05:18 2015

From: gsantacana at gmail.com (Guido Santacana)

Date: Sun, 22 Nov 2015 20:05:18 -0400

Subject: [BoatAnchors] GPR-90 Report

In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD3230097D6@ISUEMBX02.ad.ilstu.edu>

References: <0DEBF1C8D8437248BE53CD4213B89BD3230097D6@ISUEMBX02.ad.ilstu.edu>

Message-ID: <92DFFE5F-7088-4B76-BA7C-87C65278C246@gmail.com>

Aversion to modify gear is mutual. In my beginnings collecting BAs a lot of gear that I was able to get locally had mods. Sometimes they were horribly done. The worse case was an HRO 5T with all octal tubes replaced by miniature ones. Using the original ceramic tube bases provided by the former owner, I retrofitted the radio with the original tubes. The only radio with a mod here is the R392. It had the common solid state audio mod and it sounds so good that I am at odds of replacing it with the original tube circuit.

Best 73s

Guido

Guido Santacana KP4FAR

Sent from my iPad

On Nov 22, 2015, at 6:45 PM, "Singley, Rodger via BoatAnchors" <boatanchors at theporch.com> wrote:

> I have a GPR-90 and the follow-up GPR-92 and they are some of the most attractive receivers of the era and have a very nice tuning feel. The only complaint I have with the GPR-90 is the BFO will try to sync lock with stronger CW signals dropping the beat note to near zero; this can be addressed by reducing coupling from the BFO. The GPR-92 has one annoying characteristic to me and that is its IF selectivity shape factor. It has selectable bandwidth in 6 steps from .5 Khz to 15 Khz. @-6db but at -60db the narrow selection is over 23 Khz. wide while the others cluster around the 27 Khz. wide range @-60db so you experience a lot of interference from strong signals even fairly far away from your operating frequency. The GPR-90 doesn't have the selectivity of good mechanical or crystal lattice filter equipped receivers but it has a superior shape factor to the 92 with the narrow choices around 7 to 8 Khz. wide @-60db instead of 23 Khz. There is a note in the GPR-92 introductory broc  
> hure that indicates it can be used with a SBC-2 "demultiplexing SSB converter"

offering 4 voice channels or 64 RTTY channels and the ability to accommodate this converter may be the reason for its IF characteristics.

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>

> Rodger WQ9E

>

> Dr. Rodger B. Singley

> Professor of Marketing

>

>

>> -----Original Message-----

>> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf

>> Of Richard Knoppow via BoatAnchors

>

> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From 1oldlens1 at ix.netcom.com Sun Nov 22 22:12:19 2015

From: 1oldlens1 at ix.netcom.com (Richard Knoppow)

Date: Sun, 22 Nov 2015 19:12:19 -0800

Subject: [BoatAnchors] GPR-90 Report

In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD3230097D6@ISUEMBX02.ad.ilstu.edu>

References: <0DEBF1C8D8437248BE53CD4213B89BD3230097D6@ISUEMBX02.ad.ilstu.edu>

Message-ID: <56528413.3040906@ix.netcom.com>

The coupling cap from the BFO to detector is 15pF which I think is too large. I would try about a 2 to 5 pF cap and see if there is enough injection for CW. SSB as always in receivers without product detectors, requires running at low RF gain and high audio gain but will usually work.

The BFO in the SP-600 is connected a buffer and in turn to the last IF amp which allows it to run at low level and have good isolation.

The IF is critically coupled with a single step. Narrower bandwidths

are all from the crystal filter. While the filter is a good one (Hammarlund patent) single crystal filters do not have very good skirt selectivity. They are fine for CW, especially if you want to hear some adjacent signals, but are poor for SSB or AM.

The GSB-1 or MSR-5 or 9 has much better performance. The Hammarlund HC-10 has not only a good filter but connects to the AVC so it controls all stages of the receiver. The TMC adaptors have a slow AVC in themselves but it can not be connected to the AVC in the receiver so you can hear the fast AVC pumping on some signals. I have never seen a graph of the actual response of the TMC filters but suspect they are about the equivalent of a mechanical filter as is the one in the Hammarlund unit.

Note that the IF in the Hammarlund SP-600 like that in the earlier Super-Pro receivers has a variable coupling arrangement for varying the bandwidth. up to the 400 this consisted of a moving coil in two of the transformers resulting in an ideal variation of mutual inductance. The 600 (and AR-88) have auxilliary coupling coils which are switched in by the bandswitch. They very nearly duplicate the moving coil in yielding pure mutual inductance variation and completely symmetrical variation in bandwidth. The TMC receivers have fixed mutual inductance with the idea (presumably) that overall bandwidth and shape will be obtained with an outside filter of some sort. While the filters in the Hammarlund and TMC sideband adapters are LC type they operate at high audio frequencies so the inductors have very high Q and the skirt selectivity can be made steep. Collins used magneto electric resonators to obtain the high-Q at normal IF frequencies (developed at RCA of all places) and others used piezoelectric crystal filters for the same reason. At the time Collins chose to use the mechanical (really electromagnetic) filters they were easier to manufacture than an equivalent crystal lattice filter.

For lots more about TMC and its products see the TMC repository at

<http://jptronics.org/>

There is more on the RBA/RBB/RBC as well as the AR-88

at: <http://www.radioblvd.com/>

Also explore: <http://navy-radio.com/index.htm>

This has a section on 1940s and earlier Navy equipment.

On 11/22/2015 2:45 PM, Singley, Rodger wrote:

> I have a GPR-90 and the follow-up GPR-92 and they are some of the most attractive receivers of the era and have a very nice tuning feel. The only complaint I have with the GPR-90 is the BFO will try to sync lock with stronger CW signals dropping the beat note to near zero; this can be addressed by reducing coupling from the BFO. The GPR-92 has one annoying characteristic to me and that is its IF selectivity shape factor. It has selectable bandwidth in 6 steps from

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> Rodger WQ9E

>

> Dr. Rodger B. Singley

> Professor of Marketing

>

>

>> -----Original Message-----

>> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf

>> Of Richard Knoppow via BoatAnchors

>

--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From wb0eq at yahoo.com Mon Nov 23 21:09:26 2015

From: wb0eq at yahoo.com (John Sehring)

Date: Tue, 24 Nov 2015 02:09:26 +0000 (UTC)

Subject: [BoatAnchors] O'Scope primer

References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>

Message-ID: <1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>

I found a nice primer on Oscilloscopes by Rohde & Schwarz.  
<http://www.rohde-schwarz-usa.com/rs/324-UVH-477/images/Oscilloscope-Basics.pdf>  
They are of course builders of "top-drawer, world-class electronics."  
I met Ulrich Rohde once.? We both lived in New Jersey at the time & attended the same ham-radio club events.  
"Smart dude" is a vast understatement!  
--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

From gumbear at pacbell.net Mon Nov 23 22:03:51 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Mon, 23 Nov 2015 19:03:51 -0800  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
Message-ID: <F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>

> .....<http://www.rohde-schwarz-usa.com/rs/324-UVH-477/images/Oscilloscope-Basics.pdf>  
> .....

That's all fine and dandy if you want to know about digital signal processing oscilloscopes. Wonder what can be dug up on analog oscilloscope basics?

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From k1lky68 at gmail.com Mon Nov 23 22:44:13 2015  
From: k1lky68 at gmail.com (Roy Morgan)  
Date: Mon, 23 Nov 2015 22:44:13 -0500  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
Message-ID: <7DA18B5B-CA6B-4084-852B-3537C09B9FD2@gmail.com>



On Nov 23, 2015, at 10:03 PM, Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

>> ... Wonder what can be dug up on analog oscilloscope basics?

Many (all?) of the Tektronix scope manuals have an introductory ?how-to-use? section that is quite useful.

There are a couple of Tab books that relate - one is  
"Vintage 1968 Hardback Book (TAB BOOKS) 99 WAYS TO USE YOUR OSCILLOSCOPE?  
(ebay item 121798619355)

another is:

Understanding & Using the Oscilloscope by Clayton Hallmark PB Tab Books 1977  
(also on ebay for ~\$5)

Here are other things found with an Amzon search for ?oscilloscopes?

Troubleshooting With Your Triggered-Sweep Oscilloscope  
by Robert L. Goodman

Complete Book of Oscilloscopes  
by Stan Prentiss

The Oscilloscope.  
by Zwick, George,

Practical Troubleshooting with the Modern Oscilloscope & Practical Troubleshooting  
with Modern Electronic Test Instruments  
by Robert L. Goodman

Understanding and Using the Oscilloscope  
by Clayton L. Hallmark

Roy Morgan  
k1lky68 at gmail.com  
K1LKY Since 1958

From gumbear at pacbell.net Tue Nov 24 04:44:28 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Tue, 24 Nov 2015 01:44:28 -0800  
Subject: [BoatAnchors] O'Scope primer

In-Reply-To: <7DA18B5B-CA6B-4084-852B-3537C09B9FD2@gmail.com>  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
<7DA18B5B-CA6B-4084-852B-3537C09B9FD2@gmail.com>  
Message-ID: <0B2006FFEFCF423398C7A991CEC279EF@KB6NAX>

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(ebay item 121798619355)

> another is:  
Understanding & Using the Oscilloscope by Clayton Hallmark PB Tab Books 1977  
(also on ebay for ~\$5)

I'm referring to more of a tutorial on the principles and practical design  
of oscilloscope circuitry for us fixer-upper types. Of course nothing works  
better to learn such things then diving in and restoring 'scopes to  
workability.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From w4rl at bellsouth.net Tue Nov 24 05:25:17 2015  
From: w4rl at bellsouth.net (Robert)  
Date: Tue, 24 Nov 2015 04:25:17 -0600  
Subject: [BoatAnchors] Robert W4RL 120 VAC Male connector needed per 32V-3  
Dow Key antenna relay  
Message-ID: <56543B0D.7020906@bellsouth.net>

Fellas,

I've my new (to me) 32V-3 on the operating bench and in the process of  
getting that gal all ready to put fire into the wire.  
One need those. The stock female connector exiting on a short cable  
proving the 120 VAC for keying a same voltage Dow Key relay with

external contact is in need for it's male connector. The connector type, a type we've all seen as one point in BA time are 1 inch long and 5/8's inch in diameter. Have the usual two screw assembly to cable compression for a secure fit and are black wrinkled painted.

I only need the MALE plug.

If any of you could dig around in your golden jawnk part drawers,....or boxes, even brown paper bags etc and find one of which you're will to part, please let me know. I'll gladly pay all per your price and S&H via US currency or Confederate Scrip per the Bank of Montgomery. Please contact me either email w4rl at bellsouth.net or twisted pair 850.476.1226 in afternoons or evenings.

73

Robert W4RL

From hankvc at lostwells.net Tue Nov 24 10:42:50 2015  
From: hankvc at lostwells.net (hankvc at lostwells.net)  
Date: Tue, 24 Nov 2015 08:42:50 -0700 (MST)  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <0B2006FFEF423398C7A991CEC279EF@KB6NAX>  
Message-ID: <201511241542.tA0Fgofe011174@julie.lostwells.net>

Arden Allen via BoatAnchors said:

>  
> > Many (all?) of the Tektronix scope manuals have an introductory  
> > ?how-to-use? section that is quite useful.  
>  
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>  
> > another is:  
> Understanding & Using the Oscilloscope by Clayton Hallmark PB Tab Books 1977  
> (also on ebay for ~\$5)  
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> I'm referring to more of a tutorial on the principles and practical design  
> of oscilloscope circuitry for us fixer-upper types. Of course nothing works  
> better to learn such things then diving in and restoring 'scopes to  
> workability.  
>

Arden, the best source of information for Tek scopes is the "Principles of Operation" section of the manual. That will give you specific information about the scope you are fixing. There are enough differences, particularly in the vertical amplifiers, that you you need

to focus on the particular design of the scope you are working on.

On Tek 1953-70 sweep circuits, you'll see "Miller Integrator" used to describe what you should recognize as an Operation Amplifier circuit. It is switched at the summing junction to run up at the sweep rate, then run back down much more quickly.

On the larger plug-in scopes (530/540 series), the output of the plug-in to the vertical amplifier is 100 mv/cm differential elevated to 100 volts DC.

One handy conversion formula to keep in mind is that Bandwidth X Risetime = .35. Risetime of a square wave is measured at the 10% and 90% points, and assumes that the input square wave has a much shorter risetime than the scope amplifier.

Hank

Tektronix published at least two editions of "Typical Oscilloscope Circuitry," but a copy is probably pretty hard to find nowadays. Another (early) source is Millman and Taub, "Pulse and Digital Circuits," McGraw-Hill 1956. These books talk about tube scopes.

From ark at ar88.net Tue Nov 24 10:52:49 2015  
From: ark at ar88.net (Al Klase)  
Date: Tue, 24 Nov 2015 10:52:49 -0500  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
Message-ID: <565487D1.5080203@ar88.net>

Arden and The Gang,

We faced up to this problem a few years ago with the New Jersey Antique Radio Club's Oscilloscope School (a.k.a. 'Scopes for Dopes).

The whole thing has been immortalized on YouTube:  
<https://www.youtube.com/watch?v=SMZknPwkFJg>

The basic text was the old Tektronix "XYZ's of Using and Oscilloscope."  
[http://www.njarc.ar88.net/ScopeSchool/XYZs\\_of\\_Using\\_a\\_Scope.pdf](http://www.njarc.ar88.net/ScopeSchool/XYZs_of_Using_a_Scope.pdf)

I did the intro, and Alan Wolke, our local Tektronix apps guy, did the main presentation.

Enjoy,

Al

Al Klase ? N3FRQ  
Jersey City, NJ  
<http://www.skywaves.ar88.net/>

On 11/23/2015 10:03 PM, Arden Allen via BoatAnchors wrote:

>> .....<http://www.rohde-schwarz-usa.com/rs/324-UVH-477/images/Oscilloscope-Basics.pdf>

>> .....

>

> That's all fine and dandy if you want to know about digital signal  
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> Arden Allen

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> his treatment of animals.

> ?Immanuel Kant

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From wb0eq at yahoo.com Tue Nov 24 10:57:55 2015

From: wb0eq at yahoo.com (John Sehring)

Date: Tue, 24 Nov 2015 15:57:55 +0000 (UTC)

Subject: [BoatAnchors] A gentle reminder [ported over from DrakeRadio list  
on Yahoo]

References: <705447281.9999105.1448380675931.JavaMail.yahoo.ref@mail.yahoo.com>

Message-ID: <705447281.9999105.1448380675931.JavaMail.yahoo@mail.yahoo.com>

A gentle reminder...

Remember, you're working on equipment that is between 40 and 50 years  
old.

Some it has sat on a shelf for 20-30 years.

Some of it has been "run hard and put away wet."

Some of it has been owned by people proud of the fact that they "never  
read the manuals."

Some of it has been previously repaired by people that really shouldn't

be allowed to touch anything more complicated than a rock.  
And lastly, some of it has been "modified" by people convinced that the original engineers at Drake were knuckle dragging morons.

Also, bear in mind that for some sellers, "Runs good" just means that the dial lights came on and it didn't immediately burst into flames.

That being said, this is the right place to come to for help and tricks to get your vintage radio to operate properly again.

Obligatory shill: The CDs [for almost all Drake equipment] that Garey [Barrell; k4oah;

k4oah at mindspring.com; www.k4oah.com] has with the manuals and extra details like all the physical parts placement are worth their weight in gold.

I know why you want this gear. Either you've always wanted it and this will be your first. Or you've had it in the past and want it again.

That was then, this is now. When you acquire any piece of vintage gear, bear in mind it's going to need a few things to make it work right.

1. A thorough inspection for damaged or missing parts.
2. A good cleaning to remove dust and dirt.
3. Tube and crystal sockets need cleaning as do switch contacts.
4. Variable controls need cleaning as well.
5. Odds are good it will need at least a minor alignment.
6. Some vacuum tubes will not be as good as they could be.

But....Once you get everything ship shape and correctly working, you'll find the the effort involved was well worth it and that the equipment is a joy to use. And of course, the pride of "I made this happen."

Jeff

WA6FWI

jdanagus at att.net

-----

--John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

From dave at horsfall.org Tue Nov 24 13:30:00 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Wed, 25 Nov 2015 05:30:00 +1100 (EST)  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <565487D1.5080203@ar88.net>

References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX> <565487D1.5080203@ar88.net>  
Message-ID: <alpine.BSF.2.11.1511250528250.51209@aneurin.horsfall.org>

On Tue, 24 Nov 2015, Al Klase via BoatAnchors wrote:

> The basic text was the old Tektronix "XYZ's of Using and Oscilloscope."  
> [http://www.njarc.ar88.net/ScopeSchool/XYZs\\_of\\_Using\\_a\\_Scope.pdf](http://www.njarc.ar88.net/ScopeSchool/XYZs_of_Using_a_Scope.pdf)

Wow - that's perfect for brushing up the old brain cells! Thanks.

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From gumbear at pacbell.net Tue Nov 24 15:08:54 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Tue, 24 Nov 2015 12:08:54 -0800  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <201511241542.tA0Fgofe011174@julie.lostwells.net>  
References: <201511241542.tA0Fgofe011174@julie.lostwells.net>  
Message-ID: <960C84D925204067BA09A40F3773D30C@KB6NAX>

Hank, don't stop there! (HI). An example of the problem for some of us I'm referring to, to name a few: You mentioned "operational amplifier," a good example of an "exotic" circuit for those only familiar with receiver and transmitter circuits from the tube era. The theory of differential amplification is foreign to many of those folks as it once was for me. And from there the principal of an operational amplifier as an integrator as in the Miller integrator. Another example is the ubiquitous Schmitt trigger circuit, the one that produces fast rise/fall time square waves from sine waves by utilizing positive feedback. Broad band (also known as video) amplifiers, how they get their extended bandwidths, including cascode types. Vertical delay lines, the principle of a non resonant transmission line delaying the signal so that the edge that triggers the sweep can be seen on the CRT. High voltage multiplier circuits for providing the high potentials for the CRT beam acceleration, focusing and control elements. Display registration correction circuits are really fun to try and understand. Some of these circuits are well explained in Tek manuals and some not so well. And I'm sure there are more exotic oscilloscope circuits I have yet to run into and understand.

Also some of these circuits can be learned from radar circuit fundamentals texts.

> Arden, the best source of information for Tek scopes is the "Principles

of Operation" section of the manual. That will give you specific information about the scope you are fixing. There are enough differences, particularly in the vertical amplifiers, that you need to focus on the particular design of the scope you are working on.

> On Tek 1953-70 sweep circuits, you'll see "Miller Integrator" used to describe what you should recognize as an Operation Amplifier circuit. It is switched at the summing junction to run up at the sweep rate, then run back down much more quickly.

> On the larger plug-in scopes (530/540 series), the output of the plug-in to the vertical amplifier is 100 mv/cm differential elevated to 100 volts DC.

> One handy conversion formula to keep in mind is that Bandwidth X Risetime = .35. Risetime of a square wave is measured at the 10% and 90% points, and assumes that the input square wave has a much shorter risetime than the scope amplifier.

Hank

From w3kc at verizon.net Tue Nov 24 21:22:55 2015  
From: w3kc at verizon.net (ChasW3KC)  
Date: Tue, 24 Nov 2015 21:22:55 -0500  
Subject: [BoatAnchors] O'Scope primer  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX>  
<7DA18B5B-CA6B-4084-852B-3537C09B9FD2@gmail.com>  
<0B2006FFFEFCF423398C7A991CEC279EF@KB6NAX>  
Message-ID: <C209322534F74596B39A763C8B2E3D4D@chasmain>

If you want to delve further (especially into vintage scopes), Jim Williams's notes provide lots of insight and inspiration.  
A good example :  
<http://readingjimwilliams.blogspot.com/2012/02/vintage-scopes-are-better-part-4.html>

73 Chas W3KC

From k1lky68 at gmail.com Tue Nov 24 22:08:01 2015  
From: k1lky68 at gmail.com (Roy Morgan)  
Date: Tue, 24 Nov 2015 22:08:01 -0500  
Subject: [BoatAnchors] O'Scope primer



In-Reply-To: <alpine.BSF.2.11.1511250528250.51209@aneurin.horsfall.org>  
References: <1696760542.10224453.1448330966973.JavaMail.yahoo.ref@mail.yahoo.com>  
<1696760542.10224453.1448330966973.JavaMail.yahoo@mail.yahoo.com>  
<F8EAB469368141F4B485943CDB1E2D7D@KB6NAX> <565487D1.5080203@ar88.net>  
<alpine.BSF.2.11.1511250528250.51209@aneurin.horsfall.org>  
Message-ID: <844F60D5-6731-4CEE-9E8D-90A75FD5D655@gmail.com>

On Nov 24, 2015, at 1:30 PM, Dave Horsfall via BoatAnchors <boatanchors at theporch.com> wrote:

> On Tue, 24 Nov 2015, Al Klase via BoatAnchors wrote:  
>  
>> The basic text was the old Tektronix "XYZ's of Using and Oscilloscope."  
>> [http://www.njarc.ar88.net/ScopeSchool/XYZs\\_of\\_Using\\_a\\_Scope.pdf](http://www.njarc.ar88.net/ScopeSchool/XYZs_of_Using_a_Scope.pdf)  
>  
> Wow - that's perfect for brushing up the old brain cells! Thanks.

I send my thanks, also. That manual focuses on the 2200 series of Tek Scopes. I got a 2215 not too long ago and have yet to become familiar with it.

I'll read that manual cover to cover, thanks.

Roy

Roy Morgan  
k1lky68 at gmail.com  
K1LKY Since 1958

From gumbear at pacbell.net Tue Nov 24 22:45:19 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Tue, 24 Nov 2015 19:45:19 -0800  
Subject: [BoatAnchors] Shortcut to reality ("Don't buy a \*\*\*\*deleted\*\*\*\*  
oscilloscope!")  
Message-ID: <9F7D3A81194A493FB84C9EE4C4F5D51A@KB6NAX>

My kind of thinking:

[https://www.youtube.com/watch?feature=player\\_embedded&v=Xh9FNRpta9s](https://www.youtube.com/watch?feature=player_embedded&v=Xh9FNRpta9s)

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by

his treatment of animals.  
?Immanuel Kant

From kk5na at kk5na.com Wed Nov 25 07:38:15 2015  
From: kk5na at kk5na.com (kk5na)  
Date: Wed, 25 Nov 2015 06:38:15 -0600  
Subject: [BoatAnchors] O'Scope primer  
Message-ID: <5655ABB7.1010309@kk5na.com>

Here are a couple of good links : straight forward explanation of  
operation and examples of use.

<http://www.aoc.nrao.edu/~pharden/hobby/Scope1.pdf>  
<http://www.aoc.nrao.edu/~pharden/hobby/Scope2.pdf>

...and another for an earlier time by same author:  
[http://www.amqrp.org/reference/na5n\\_Oscilloscopes.pdf](http://www.amqrp.org/reference/na5n_Oscilloscopes.pdf)

--

73, Joe KK5NA

~~~~~

From anchor at ec.rr.com Wed Nov 25 13:05:12 2015  
From: anchor at ec.rr.com (Al Parker)  
Date: Wed, 25 Nov 2015 13:05:12 -0500  
Subject: [BoatAnchors] Alan Douglas, author, SK  
Message-ID: <5655F858.8010000@ec.rr.com>

Hi folks,

I visited Alan Douglas 15+- yrs ago, we swapped somethings, IIRC. My  
wife saw his obit in the Cape Cod Times this AM. She and Alan went to  
the same high school in Bourne, 2 yrs apart.

He wrote "Tube Testers and Classic Electronic Gear" among other titles,  
and collected interesting old equipment. He worked for Benthos,  
Hydroponics Equipment Supplier, in Falmouth, MA, for much, if not all,  
of his working life.

See the obit at <<http://tinyurl.com/q65fulz>>

sorry for the sad news,

73,

Al, W8UT  
[www.boatanchors.org](http://www.boatanchors.org)  
[www.hammarlund.info](http://www.hammarlund.info)

"There is nothing -- absolutely nothing -- half so much  
worth doing as simply messing about in boats"  
Ratty, to Mole

From wb0eq at yahoo.com Wed Nov 25 15:45:27 2015  
From: wb0eq at yahoo.com (John Sehring)  
Date: Wed, 25 Nov 2015 20:45:27 +0000 (UTC)  
Subject: [BoatAnchors] Measuring low-level hum  
References: <2032891114.10764056.1448484327773.JavaMail.yahoo.ref@mail.yahoo.com>  
Message-ID: <2032891114.10764056.1448484327773.JavaMail.yahoo@mail.yahoo.com>

Continuing with my journey of restoring "sensitive" AC voltmeters.

In the course of calibrating my ME-6D/U AC voltmeter, as signal sources I'm using audio oscillators at hand, three Hewlett-Packard model 200CD (of various vintages) and a Krohn-Hite \_\_\_\_\_.

When I measure low voltage levels at 60 Hz (& harmonics), the voltmeters' meters quaver when I get very close to those frequencies. I'd say the AC output of the oscillators \*and\* of the voltmeters B+ ripple \*and\* of the audio oscillator B+ ripple are all beating against one another.

With some of the H-P oscillators, the "modulation" seen on the meters is ridiculously large--oscillator needs some work.!

(Now these equipments are all around the half-century mark in age. Even though H-P advertised its use of special "long life" electrolytic capacitors in the power supplies, there's got to be a limit, right?)

I have had no experience in evaluating ripple voltage on B+ supplies. These power supplies all use full wave rectifiers so the ripple frequency will be 120 Hz from a 60 Hz AC power source. Question is, how much ripple is acceptable?

While cruising around the Ballantine AC voltmeter offerings on the web, I found a schematic for the model 300H-U7 voltmeter design (which I have). It lists power supply ripple voltages for 60 Hz (and 400 Hz) operation. I'd not seen this specified before, so thought to share it here.

The B+ supply of this voltmeter is conventional and starts with a 6X4 being fed 720 VAC plate to plate from the power transformer. A capacitor input type filter starts, using 10 uF to ground (ripple spec'd here of 4.0 VAC @ 120 Hz riding on 390 VDC), followed by a resistor of 4k (ripple of 0.1 VAC, @120 Hz on 270 VDC) and finally another capacitor to ground of 10 uF (giving ripple of 4mV @ 120 Hz on 150 VDC). Lastly a series 4 k resistor feeds an 0A2 from that to give a 150 VDC output. Ripple here is 4 mV on 150VDC. (This is the final B+ voltage that feeds the entire meter circuitry.)

(Also listed is the ripple from the DC voltage fed to the filament of only the first meter amplifier tube (to minimize hum). It's listed as 0.12 VAC @120 Hz on a 6 VDC line.)

Now I could just use one of these AC voltmeters under test to measure the ripple, right? Wrong!

390 VDC is too darn close for me to the maximum ratings for applied DC inputs on these meters. Looking at the input attenuator circuits shows a 330 or 400 WVDC-rated input capacitor. Toasting the attenuator would "brick" these instruments. No-no, please.

So what to do?

I found similar ideas in two different places on safely measuring high voltage ripple on the web. One is from Tremaine's "Audio Cyclopedica". And the other is from the manual for an ancient, original Ballantine AC voltmeter's paperwork, the model 300.

The latter device has a 0.5 Megohm input impedance (shunted by 30 pF). Ballantine suggests a simple RC high pass filter, to block the DC voltage from the meter. (Tremaine's suggestion is similar, non-critical I suspect.)

My "probe" is made from a 1 uF capacitor of 600 WVDC rating which goes to the voltmeter's positive input terminal. The meter's input to ground is then to be shunted by a 1 Meg resistor. DC is kept out and AC goes in, voila.

I stuffed this network into a small pill bottle for convenience and safety.

Next time, I'll actually make measurements of these ripple voltages.

--John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

From kd5byb at gmail.com Wed Nov 25 19:47:25 2015

From: kd5byb at gmail.com (Ben Hall)

Date: Wed, 25 Nov 2015 18:47:25 -0600

Subject: [BoatAnchors] Shortcut to reality ("Don't buy a \*\*\*\*deleted\*\*\*\* oscilloscope!")

In-Reply-To: <9F7D3A81194A493FB84C9EE4C4F5D51A@KB6NAX>

References: <9F7D3A81194A493FB84C9EE4C4F5D51A@KB6NAX>

Message-ID: <5656569D.9030104@gmail.com>

On 11/24/2015 9:45 PM, Arden Allen via BoatAnchors wrote:

> My kind of thinking:

> [https://www.youtube.com/watch?feature=player\\_embedded&v=Xh9FNRpta9s](https://www.youtube.com/watch?feature=player_embedded&v=Xh9FNRpta9s)

I've got to agree, mostly.

Digital storage scopes drive me nuts. We've got a collection of them at work, ranging from low-end Tek's up to some pornographically expensive Agilents and R+S units. Just too much crap to fiddle-fart around with to get a basic trace. Menus upon menus upon menus. Give me my Tek 465M any day.

I've got one of those FPGA-based scopes. It's fine when used within its limitations. Those limitations are rather narrow - IE: my little unit can't tolerate over 3.3 VDC input, has no input amplifier so you have no gain and have no resolution on low-level signals, and the triggering has very few options / settings. If you need scope for say, 1 to 3.3 VDC signals up to a few MHz or so, it will do all you need. If you need anything past that, buy used analog.

The 465M is developing a problem where if the trace is centered horizontally in the center of the knob travel where there is a detent, I get some "reflection" of the beam on the left-hand side. Move the trace to the right about a quarter inch and it goes away. I probably need to hunt this issue down.

thanks much and 73,  
ben, kd5byb

From kd5byb at kd5byb.net Wed Nov 25 19:48:11 2015  
From: kd5byb at kd5byb.net (Ben Hall)  
Date: Wed, 25 Nov 2015 18:48:11 -0600  
Subject: [BoatAnchors] Shortcut to reality ("Don't buy a \*\*\*\*deleted\*\*\*\*  
oscilloscope!")  
In-Reply-To: <9F7D3A81194A493FB84C9EE4C4F5D51A@KB6NAX>  
References: <9F7D3A81194A493FB84C9EE4C4F5D51A@KB6NAX>  
Message-ID: <565656CB.5060008@kd5byb.net>

On 11/24/2015 9:45 PM, Arden Allen via BoatAnchors wrote:  
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thanks much and 73,  
ben, kd5byb

From gumbear at pacbell.net Wed Nov 25 21:26:43 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Wed, 25 Nov 2015 18:26:43 -0800  
Subject: [BoatAnchors] Measuring low-level hum  
In-Reply-To: <2032891114.10764056.1448484327773.JavaMail.yahoo@mail.yahoo.com>  
References: <2032891114.10764056.1448484327773.JavaMail.yahoo.ref@mail.yahoo.com>  
<2032891114.10764056.1448484327773.JavaMail.yahoo@mail.yahoo.com>  
Message-ID: <6E040BB88ED84C00A50F429CFC67CDF4@KB6NAX>

> .....I have had no experience in evaluating ripple voltage on B+  
> supplies. .... Question is, how much ripple is acceptable? .....

The ripple "acceptability" criterion for any measuring instrument is by what measure it affects accuracy. You will notice that when the oscillator frequency is near the power line frequency the correct measurement is the average of the indicated reading maxima and minima. When the oscillation frequency is substantially different than the power line frequency the averaging is done by the inertia of the meter movement, it can't vibrate fast enough to display the additive and subtractive indications. Therefore the wavering of the meter's needle is a minor annoyance. In addition there can be other sources of power line frequency interference. Tube filament voltage leakage into the amplification path is one. Line frequency coupling into the external connections between measured source and meter input is another.

I always measure power supply filter ripple with an oscilloscope so I can see filter capacitor efficiency. If the leading edge of the 120Hz saw tooth overshoots then there is excessive equivalent series resistance (ESR) in the capacitor, the sign of a worn out capacitor. The fact is you will never entirely get rid of the wavering needle effect but being sure the power supply filter capacitors are good will keep the wavering to within reasonable limits.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From gumbear at pacbell.net Wed Nov 25 21:34:32 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Wed, 25 Nov 2015 18:34:32 -0800  
Subject: [BoatAnchors] Our faithful heros  
Message-ID: <494A469C9075498297AA666E68635E03@KB6NAX>

This will warm the hearts of those with military experience and associations (sort of BA related):

[http://site.americanhumane.org/site/R?i=o8rWeHBcaoz8po\\_rUuR5cA](http://site.americanhumane.org/site/R?i=o8rWeHBcaoz8po_rUuR5cA)

Happy Thanksgiving!

Arden Allen  
KB6NAX

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?Immanuel Kant

From hankvc at lostwells.net Thu Nov 26 08:42:18 2015  
From: hankvc at lostwells.net (hankvc at lostwells.net)  
Date: Thu, 26 Nov 2015 06:42:18 -0700 (MST)  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <844F60D5-6731-4CEE-9E8D-90A75FD5D655@gmail.com>  
Message-ID: <201511261342.tAQDgIeM013223@julie.lostwells.net>

Roy Morgan via BoatAnchors said:

>

>

> On Nov 24, 2015, at 1:30 PM, Dave Horsfall via BoatAnchors <boatanchors at theporch.com> wrote:

>

> > On Tue, 24 Nov 2015, Al Klase via BoatAnchors wrote:

> >

> >> The basic text was the old Tektronix "XYZ's of Using and Oscilloscope."

> >> [http://www.njarc.ar88.net/ScopeSchool/XYZs\\_of\\_Using\\_a\\_Scope.pdf](http://www.njarc.ar88.net/ScopeSchool/XYZs_of_Using_a_Scope.pdf)

> >

> > Wow - that's perfect for brushing up the old brain cells! Thanks.

>

> I send my thanks, also. That manual focuses on the 2200 series of Tek Scopes. I got a 2215 not too long ago and have yet to become familiar with it.

>

> I'll read that manual cover to cover, thanks.

>

I gave that text a look-see. It covers the basics pretty well. Thinking back on things, I learned to "use an oscilloscope" by getting one and using it. It was an old RCA 158 from ca. 1940, with the free-running relaxation oscillator sweep circuit. That circuit was pretty much a "standard" on Dumont scopes into the mid-1950's, Heathkits, and RCA's. Can't remember the specs on the RCA, but my recollection was that I could look at the 455 Khz IF in an AA5 and not much beyond. However, it was perfectly adequate for fault-finding in the horizontal/vertical sync circuits in a B+W TV, audio work, and smoking out "vitamin hum" problems. There were a number of manuals published by Dumont and in the aftermarket on "how to use," but I think my basic learning came from actually using the scope in conjunction with the service manuals for early B+W tv's.

I still remember seeing a Tek 511 in the early fifties, and being a bit bewildered by "all those knobs." As to actual "users," my first real encounter with a fancier sweep circuit was with a P4 synchroscope from the WWII era. Those scopes had a free-running clamp tube sweep that kicked a pulse out at the start of the sweep for triggering radar circuits. It wasn't until the late 1950's that I had my hands on a genuine Tek scope that used input triggering to start the sweep. Can't recall what model it was---probably a 535, with two time bases and a 53/54 C plugin.

All that was before I went to work for Tek in 1960 and lived, ate, breathed, etc. oscilloscopes for the next five years. I still think that the best way to learn what a scope can do for you on the bench is to use it. The real quantum leap from early 1930's instrumentation was the ability to see what circuits were actually doing in real time, and



that learning came from actually using one of the beasts.

Nowadays, the scopes I've kept and used are pretty plain vanilla: a Tek 533A, and a pair of 310's, and a 575 transistor curve tracer. I've got an assortment of plugins for the 533A. Why nothing fancier, when I've had a variety of later (and more capable) Tek scopes that I got working and sold "clean, working, and calibrated?" The 533A is exceptionally clean, and had a new CRT when I bought it. It's pretty rare when not having more capability crimps my style at all. A 547 or a 545B would be more cabability, but none have come my way.

As to "analog" vs. "new modren(sic)" digital, the later digital scopes are readily available at reasonable prices, and loaded with nice bells and whistles. If you have mastered using an analog scope, the digital scope features are "nice to have." But if you haven't mastered the basics, you can get into a lot of trouble with those "features." The basic questions to ask are "what am I trying to look at?" and "what do I expect to see?" followed by "how can I set this thing up to display it?" And, once you've got a display, you have to ask "is what I'm seeing here what I'm trying to look at?"

Also, there is the matter of precision. The value of a scope is in seeing the signal waveform. For precision in time and voltage measurements, you need to fall back on more precise instrumentation. Most of the time, a scope is accurate enough to say "it's in the ball park," but with limited precision.

Hank

From gumbear at pacbell.net Thu Nov 26 13:44:47 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Thu, 26 Nov 2015 10:44:47 -0800  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <201511261342.tAQDgIeM013223@julie.lostwells.net>  
References: <201511261342.tAQDgIeM013223@julie.lostwells.net>  
Message-ID: <79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>

> .....If you have mastered using an analog scope, the digital scope features are "nice to have." But if you haven't mastered the basics, you can get into a lot of trouble with those "features." .....

One of the worst "features" I've run into was the connecting dots capabilities of a very pricey LeCroy scope that for ambiguous reasons an employer I worked for in the 90's purchased. I think it was one of those spend your budget or get a smaller budget next time reasons. So I put the scope to work pushing buttons and twisting knobs to look at a pulse from a step up transformer in a high efficiency switching power supply. Having

worked with the circuit many times with Tek 7603 and 7615 analog scopes I knew what I should have been seeing. What the scope showed looked like intensive ringing on the slopey trailing edge of the pulse. I was aghast! What was typically 10% pulse width jitter was being made to appear as a badly unstable switching circuit. No matter how hard I tried I could not get the scope to display the pulse with a more realistic representation of the trailing edge of the pulse. The "feature" that was causing the problem was the scope was drawing connecting lines between sample points of multiple pulses of varying width which producing a jagged saw tooth like display which totally misrepresented the circuit's behavior. I turned off the dot connecting "feature" and was then presented with a maze of dots that obscured any possible resolution of the signal. After reporting my experience to the concerned circuit designer the over priced heap of novelties spent its remaining tenure collecting dust in a corner and I went back to using honest analog scopes.

Foot note: Later Tek solved the pulse width jitter display problem in their "digital phosphor" series of scopes I found to be very much analog like although I never was happy with the coarseness of eight bit vertical resolution which became the standard for mid to low priced digital scopes.

Arden Allen  
KB6NAX

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We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From navy.radio at gmail.com Thu Nov 26 14:26:59 2015  
From: navy.radio at gmail.com (Nick England)  
Date: Thu, 26 Nov 2015 14:26:59 -0500  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>  
References: <201511261342.tAQDgIeM013223@julie.lostwells.net>  
<79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>  
Message-ID: <CAB55hNftXDhey1xTyvK46FUKeYODiWYoJpYu=qcX-ZMFQu47PA@mail.gmail.com>

As Dr Nyquist says : "Aliasing from discrete sampling will bite you in the butt" (I'm paraphrasing here).

As Nick says, "You can have my Tek 2465 when you pry it from my cold dead fingers."

On Thursday, November 26, 2015, Arden Allen via BoatAnchors <

boatanchors at theporch.com> wrote:

>

>

> The "feature" that was causing the problem was the scope was drawing  
> connecting lines between sample points of multiple pulses of varying width  
> which producing a jagged saw tooth like display which totally  
> misrepresented the circuit's behavior.

>

--

Nick England K4NYW  
www.navy-radio.com

From 4cx250b at miamioh.edu Thu Nov 26 14:47:28 2015

From: 4cx250b at miamioh.edu (Jim Garland)

Date: Thu, 26 Nov 2015 12:47:28 -0700

Subject: [BoatAnchors] O'Scope primer

In-Reply-To: <CAB55hNftXDhey1xTyvK46FUKeY0DiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>

References: <201511261342.tAQDgIeM013223@julie.lostwells.net>

<79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>

<CAB55hNftXDhey1xTyvK46FUKeY0DiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>

Message-ID: <00a601d12883\$48503d60\$d8f0b820\$miamioh.edu>

I'm with Nick on his view of the Tek 2465. That 24XX series were (IMHO) the best analog scopes ever made. My main analog workbench scope is a 2465B, and I worried so much it would break and I'd be unable to fix it (a few key parts are unobtainium) that I bought a second one for a backup. Then I worried I'd lose that one too, so I bought a 2445B (same as the 2465B but with 150MHz BW instead of 400MHz) and also a 2465 (fewer auto-measuring features, but otherwise same as the 2465B) to back those up. I think I'm set now, but I still keep my eyes open for more! BTW, I use a Rigol 1102E for digital work and the occasional times when I need some of its computation features. It's a great little scope, but 95% of the time I use the 2465B.

73,

Jim W8ZR

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf Of Nick

> England via BoatAnchors

> Sent: Thursday, November 26, 2015 12:27 PM

> To: Old Tube Radios

> Subject: Re: [BoatAnchors] O'Scope primer

>

> As Dr Nyquist says : "Aliasing from discrete sampling will bite you in the

> butt" (I'm paraphrasing here).  
>  
> As Nick says, "You can have my Tek 2465 when you pry it from my cold dead  
> fingers."  
>  
> On Thursday, November 26, 2015, Arden Allen via BoatAnchors <  
> boatanchors at theporch.com> wrote:  
> >  
> >  
> > The "feature" that was causing the problem was the scope was drawing  
> > connecting lines between sample points of multiple pulses of varying  
width  
> > which producing a jagged saw tooth like display which totally  
> > misrepresented the circuit's behavior.  
> >  
>  
>  
> --  
> Nick England K4NYW  
> www.navy-radio.com  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From johnmb at nc.rr.com Thu Nov 26 18:10:00 2015  
From: johnmb at nc.rr.com (john)  
Date: Thu, 26 Nov 2015 18:10:00 -0500  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <CAB55hNftXDhey1xTyvK46FUKeY0DiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>  
References: <201511261342.taQDgIeM013223@julie.lostwells.net>  
<79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>  
<CAB55hNftXDhey1xTyvK46FUKeY0DiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>  
Message-ID: <56579148.5020108@nc.rr.com>

The nice thing about analog scopes is that you turn a few key knobs  
enough, you'll get a useful trace on the screen. I've not been able to  
get the same result clicking on menu screens.

Love my Tek 485. Mine came from the scrap pile just as DEC was  
transitioning to digital scopes. They thoughtfully calibrated them just  
before scrapping .

John K5MO

From vilgotch at bigpond.net.au Thu Nov 26 21:05:56 2015  
From: vilgotch at bigpond.net.au (Morris Odell)  
Date: Fri, 27 Nov 2015 13:05:56 +1100  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <CAB55hNftXDhey1xTyvK46FUKeYODiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>  
References: <201511261342.tAQDgIeM013223@julie.lostwells.net>  
<79CF822D15474C6DA74AFCBC671C7BAA@KB6NAX>  
<CAB55hNftXDhey1xTyvK46FUKeYODiWYoJpYu=qcx-ZMFQu47PA@mail.gmail.com>  
Message-ID: <2E136FE703B740AA951C0ACF2FE8BD4E@LGLaptop>

Ditto my Tek 547, even though it takes much more than just fingers to hold it.

The 547 sits on the shelf above the bench next to a Tek 7603 but in truth the 7603 hardly ever gets switched on. Even though I have quite a few scopes including a digital one, the only other Tek I use regularly is the 575.

A year or so ago I lashed out a few \$ on a kickstarter project for a scope wristwatch. Useless as a scope but a must-have nerd accessory. Alas I'm still waiting.....

Morris

-----  
As Nick says, "You can have my Tek 2465 when you pry it from my cold dead fingers."

From wb0eq at yahoo.com Thu Nov 26 22:45:33 2015  
From: wb0eq at yahoo.com (John Sehring)  
Date: Fri, 27 Nov 2015 03:45:33 +0000 (UTC)  
Subject: [BoatAnchors] O'Scope primer  
References: <1227636687.11934845.1448595933907.JavaMail.yahoo.ref@mail.yahoo.com>  
Message-ID: <1227636687.11934845.1448595933907.JavaMail.yahoo@mail.yahoo.com>

I agree with all I've read here on this.

Have settled on a pair of Tek 465's, one to use when the other is ailing--which hasn't happened yet.

Also have some "cute" Tek's, a 335 (Tek/Sony manufactured; even has delayed sweep) and a teensy 212 (battery operated, handheld). Nice conversation starters, too.

Have a 25 MHz Leader scope kicking around as a spare spare. I used a DuMont 304

for years, had two (that works when they cost only \$5 each!) were working when I gave it away. Scopes were used by U.S. Military, too.

In my other electronics area I use an old Sencore SC60A (not the one with the built-in digital instruments. Given to me by widow of old-time TV/radio serviceman--makes it even "better" for me to use.

Did need some new probes for the Sencore recently. Called Sencore (in SD), shocked learn company has practically disappeared! NO spare parts.

At one time they were prima in video/broadcast business. Had a huge product line, were first out with High Def test equipment I recall. I even visited plant once about 10 years ago.

Sad.

I appreciate the feedback on use of new SS scopes. Yes, they have some features useful to me but....I remember that a feature is not a benefit unless I want/can use it.

--John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

From spr at earthlink.net Fri Nov 27 00:02:27 2015  
From: spr at earthlink.net (Scott Robinson)  
Date: Thu, 26 Nov 2015 21:02:27 -0800  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <1227636687.11934845.1448595933907.JavaMail.yahoo@mail.yahoo.com>  
References: <1227636687.11934845.1448595933907.JavaMail.yahoo.ref@mail.yahoo.com>  
<1227636687.11934845.1448595933907.JavaMail.yahoo@mail.yahoo.com>  
Message-ID: <5657E3E3.3000206@earthlink.net>

Folks,

At work, I have a 7603--the only one in the company AFAIK. BUT I do use a modern digital storage scope (Tek digital phosphor, quite expensive but works like a real 'scope) for tasks like this:

I'm designing a power supply with multiple output voltages. It runs audio signal processing gear, so large output voltage excursions make \*very\* loud noises and break speakers, too. The outputs are muted with relays until the box is booted and in order on power-up and as soon as I can detect a power outage on power-down. So I put a voltage threshold circuit on the rail that falls first and use it to release the relays.

The trick is to prove that all this works right, and a storage scope with four inputs plus trigger and \*color-coded traces\* is just the right tool for it. I can capture a signal and its disappearance (means the relays dropped out) as well as the relevant rails and the pre-relay signal and show that I have the right time constants and all for it to work reliably.

Otherwise, I like the 7603 just fine.

At home I have a Tek 2236--the one with the high precision counter in it--two 465s, a 475, and Phillips 2417. The Phillips is the one that works at the moment; one 465 needs, I think filter caps, and the other has unknown troubles, as does the 475. The 2236 works but has a damaged input due to a failure in a X!0 probe whose V max I exceeded. Darn thing shorted through instead of to ground, and shorted out a 10 pF cap in the ch 1 input, which is in a very inaccessible place. I also have a military version of a 7603 with HV troubles.

I better find time to fix one of the Tek scopes before the Phillips dies.

Peace,

Scott

From rbsingl at ilstu.edu Fri Nov 27 15:12:06 2015  
From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Fri, 27 Nov 2015 20:12:06 +0000  
Subject: [BoatAnchors] O'Scope primer  
Message-ID: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>

I have a pair of Tek 7854 scopes at the bench and those have been my mainstay for about 15 years. I did pick up a basically new TDS-210 LCD portable for \$50 last year and it is handy for a few tasks when doing testing at one of my many vintage station setups but I much prefer my older scopes. I also have a 7623 which is used just with a spectrum analyzer plug-in.

In addition I still have the very early Type 514AD that was my father's scope that he bought from base surplus many years ago when he was a civilian working in Keesler AFB's PMEL lab. I learned at a very young age how to go through the calibration procedure for the L/C delay line that preceded coaxial delay lines in Tektronix scopes.

Scopes are also very attractive to the younger crowd. My 12 year old daughter Anna has temporarily taken possession of my 556 dual beam scope and is using it with a physics book she is reading for school. An HP signal generator and Tektronix Time Mark generator have also disappeared from the "basement lab"

courtesy of my daughter :)

Rodger WQ9E

From vilgotch at bigpond.net.au Fri Nov 27 16:14:58 2015  
From: vilgotch at bigpond.net.au (Morris Odell)  
Date: Sat, 28 Nov 2015 08:14:58 +1100  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <002d01d12958\$abb37220\$031a5660\$@bigpond.net.au>

Rodger wrote:

Scopes are also very attractive to the younger crowd. My 12 year old daughter Anna has temporarily taken possession of my 556 dual beam scope and is using it with a physics book she is reading for school. An HP signal generator and Tektronix Time Mark generator have also disappeared from the "basement lab" courtesy of my daughter :)

Rodger WQ9E

-----  
Wow, a 556 at the age of 12! She doesn't know how lucky she is. I fell in love with scopes at about that age after seeing an old DuMont connected to a microphone in our local museum. My first scope a few years after that was home made with a 5BP1, gas tube timebase and 6AC7 AC coupled vertical amp - I thought it was very cool! 50 years later I'm trying to get the grandkids away from the iDevices but at least they still read paper books.

Morris VK3DOC

From wa9jml at frontier.com Fri Nov 27 17:13:20 2015  
From: wa9jml at frontier.com (Steve Berg)  
Date: Fri, 27 Nov 2015 16:13:20 -0600  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
Message-ID: <5658D580.7010107@frontier.com>

I also have a 565 dual beam scope. If your 12 year old daughter "disappeared" this from your lab, I sure hope she had lots of help! I think my scope weighs in at about 150 pounds.

73,



Steve WA9JML

On 11/27/2015 2:12 PM, Singley, Rodger via BoatAnchors wrote:

> I have a pair of Tek 7854 scopes at the bench and those have been my mainstay for about 15 years. I did pick up a basically new TDS-210 LCD portable for \$50 last year and it is handy for a few tasks when doing testing at one of my many vintage station setups but I much prefer my older scopes. I also have a 7623 which is used just with a spectrum analyzer plug-in.

>

> In addition I still have the very early Type 514AD that was my father's scope that he bought from base surplus many years ago when he was a civilian working in Keesler AFB's PMEL lab. I learned at a very young age how to go through the calibration procedure for the L/C delay line that preceded coaxial delay lines in Tektronix scopes.

>

> Scopes are also very attractive to the younger crowd. My 12 year old daughter Anna has temporarily taken possession of my 556 dual beam scope and is using it with a physics book she is reading for school. An HP signal generator and Tektronix Time Mark generator have also disappeared from the "basement lab" courtesy of my daughter :)

>

> Rodger WQ9E

>

> -----  
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

From gumbear at pacbell.net Fri Nov 27 19:59:24 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Fri, 27 Nov 2015 16:59:24 -0800

Subject: [BoatAnchors] O'Scope primer

In-Reply-To: <5658D580.7010107@frontier.com>

References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
<5658D580.7010107@frontier.com>

Message-ID: <9CC80488118748AD860ED113261816E9@KB6NAX>

My first encounter with an oscilloscope where I could actually manipulate the controls was in the Navy where the outfit I was in could buy whatever they wanted so one day a brand new Tek 945B, the militarized version of the 545B, showed up on the avionics shope. It was a novelty, we had no use for it. After playing with the scope for a while by serendipity I was tasked to lug an ARC-27 to the AMD lab for repairs. That was my golden chance. I asked the Marine sergeant in charge of the lab if I could get transferred

temporarily (TAD) from my Navy outfit (Pacific Missile Range Facility, Hawaii) so I could put my school training to use repairing radios. I got transferred so fast I didn't have a chance to say, "so long, suckers" to my outfit. The AMD had a pile of ARC-27's they couldn't find anyone who could repair them and Barber's Point NAS couldn't repair one that would last more than one flight in an A4 or F8 the Marines were flying. Too many planes "down" was the problem. I was treated like royalty the day I got my first ARC-27 off the bench. The ARC-27 bench had one of those suitcase 'scopes with the tiny screen that was as useful as a concrete pile for working on UHF radios, no bandwidth, no sensitivity and no triggered sweep. The 945B had spoiled me rotten. Not much later I penetrated the depths of the shop stock room and found to my delight a small collection of unused Tek scopes. I didn't flinch as I pounced on a 531A and dragged it to my bench. Wow, did that scope make me happy. I even coupled RF from the ARC-27's under repair into one of the vertical plates of the 531A so I could observe modulation envelopes which enabled me to see just how good the 829B was modulating the 2C39 finals. It worked perfectly as the vertical delay line isolated the UHF RF from the rest of the scope. That was my second love affair with Tek scopes.

A few years after I got out of the Navy I bought a used 503 by chance from my boss at work for about 1/5 its new price. That became my third love affair with Tek scopes and I still have that 503 and several others because one always needs another spare and I've restored bunches of them over the years for the sheer joy of bringing those beautifully humble but oh so useful scopes back to health. I've blabbed enough for now so I'll talk about my other Tek love affairs later.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From k7sz at live.com Fri Nov 27 20:33:44 2015  
From: k7sz at live.com (Rich Arland)  
Date: Sat, 28 Nov 2015 01:33:44 +0000  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
Message-ID:  
<DM3PR12MB0874F2CCA7B6F5155B7B52BCF6020@DM3PR12MB0874.namprd12.prod.outlook.com>

I have had a long time relationship with oscilloscopes, starting in the mid-60s with the Eico 5 inch CRT/5MHz scope our television repairman had in his work area. Between the USAF and ham radio I became a lover of the blue and silver paint scheme of Tektronix of Beaverton, OR. Of course, the military often has a bottomless pot of money for commercial test gear and during my stint as a Tech Controller I found myself ensconced in front of many different Tek scopes.

A couple of years ago we moved from PA to GA and much of my then current workbench test gear was sold off to save weight and provide room for more "important" stuff making the trip to GA. Once in Dacula, GA I scouted several hamfests in search of a smaller scope (somewhere between 3 and 4 inch CRT) for my new workbench. Bob Garcia, KD4JRT, "The Scope Guy" sold me a Tek 326, a 3 inch 5MHz portable scope that would run on 12VDC and 120VAC. It's small footprint was just perfect for the new workbench.

Several years later I sold it to gather funds for another project, leaving a hole in my test gear line-up. Earlier this month, at the Stone Mountain Hamfest, Bob, once again, came to my rescue and sold me a very nice Tek 222, a 2 inch 10MHz ultra-portable scope that came with a carrying case, spare rechargeable battery, charger, probes, and manual. Price \$195, which I considered more than fair for the condition of the scope and accessories.

Now I have a very nice tiny scope that is perfect for the troubleshooting and homebrewing that I am going to be doing in the near future, when we move into an RV for some traveling. All in all, I love scopes, especially Tek scopes. They are, quite literally, the window into the world of AC and RF.

Vy 73  
Rich K7SZ

From wa9jml at frontier.com Fri Nov 27 20:47:36 2015  
From: wa9jml at frontier.com (Steve Berg)  
Date: Fri, 27 Nov 2015 19:47:36 -0600  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <9CC80488118748AD860ED113261816E9@KB6NAX>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
<5658D580.7010107@frontier.com> <9CC80488118748AD860ED113261816E9@KB6NAX>  
Message-ID: <565907B8.5020303@frontier.com>

I probably owe my electronics career to Tektronix scopes. When I got back from Vietnam in 1970, I promptly fell off my BSA motorcycle, whilst riding on ice in February. When my broken elbow healed, I needed to find a job. Nobody wanted to hire us drug deranged baby burners, and as I was in the infantry and recon, I was doubly besmirched. So, I went to a head hunter, and he suggested Motorola. He also got me an older copy of their entrance exam. So, I studied, and got an appointment for a personnel interview. I apparently passed the different test with flying

colors, so they took me out to the factor floor to talk with the system testing supervisor. He showed me a test bench for Motrac radios, and I commented on the nice Tek scope. He turned to the personnel guy and said, "At least he knows what an oscilloscope looks like, and that is better than what we are getting from DeVry Tech these days..." So Sam Riggi gave me the break that I really needed. I worked in a bunch of other areas in the factory, and then in Motorola field service. I also worked on RCA and GE radios at a local shop, here. Then, I started working in microwave stuff, and then millimeter wave hardware, and eventually designed equipment for radio astronomy, which led to a stint at IIT Research Institute working in tactical missile guidance. I have had a wonderful, but rather unusual career for someone whose formal education was in political science, ending in a doctorate. And, I owe it all to Sam Riggi and Tek scopes!

73,

Steve WA9JML

From wa5jci at basicisp.net Fri Nov 27 20:50:12 2015  
From: wa5jci at basicisp.net (Spencer Petri)  
Date: Fri, 27 Nov 2015 19:50:12 -0600  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <DM3PR12MB0874F2CCA7B6F5155B7B52BCF6020@DM3PR12MB0874.namprd12.prod.outlook.com>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
<DM3PR12MB0874F2CCA7B6F5155B7B52BCF6020@DM3PR12MB0874.namprd12.prod.outlook.com>  
Message-ID: <20151127175013.2832CA8A@m0089744.ppops.net>

In the late 80s, early 90s a group of us went to the Dallas sidewalk sale almost every month. I bought a 545B for \$10. It was perfectly clean, I surmised it must have been used in a clean room. Over the next months I bought every different type of plug-in I could find, at \$2 to \$3ea, but never got the spectrum analyzer plug-in. It still works as great as it ever did, one of the best bargains acquired, right up there with \$10 ART-13 and \$20 SP-600s. Hello K7IRK!

de Pete WA5JCI

,

From scr287 at att.net Fri Nov 27 21:34:47 2015  
From: scr287 at att.net (Jack Antonio)  
Date: Fri, 27 Nov 2015 21:34:47 -0500  
Subject: [BoatAnchors] O'Scope primer

In-Reply-To: <20151127175013.2832CA8A@m0089744.pops.net>  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
<DM3PR12MB0874F2CCA7B6F5155B7B52BCF6020@DM3PR12MB0874.namprd12.prod.outlook.com>  
<20151127175013.2832CA8A@m0089744.pops.net>  
Message-ID: <565912C7.8060400@att.net>

My daily driver scope is a 453.

I learned to like the 453 at work, when I started at the TV station many moons ago, we had one to service remote microwave sites. That poor scope survived backpacks, ski lifts, helicopters, sno-cats, and other assorted indignities, but always worked like a champ. A few years later we bought a 453A, wider bandwidth and the TV sweep trigger, but we always took the older scope to the sites. Although not used much, it was still in service when I retired.

Also at work, we had a 535 and a 545. We were on channel two, and found that both the 453 and 545 were bothered by 55 MHz RF at the transmitter site, but the 535 was not.

I found another 453 and a 335 at an estate sale about a year ago, the 335 had an exploded tantalum, and is repaired, the 453 has no trace, one of these days, I'll try to get around to looking at it.

Jack Antonio WA7DIA/4

From bob at vanirmail.com Sat Nov 28 03:53:33 2015  
From: bob at vanirmail.com (Bob Moody)  
Date: Sat, 28 Nov 2015 00:53:33 -0800  
Subject: [BoatAnchors] O'Scope primer  
References: <0DEBF1C8D8437248BE53CD4213B89BD323009E8E@ISUEMBX02.ad.ilstu.edu>  
<DM3PR12MB0874F2CCA7B6F5155B7B52BCF6020@DM3PR12MB0874.namprd12.prod.outlook.com>  
<20151127175013.2832CA8A@m0089744.pops.net>  
Message-ID: <97081ED608EB4CF78773A1683962EF90@LENOV08EA8B73D>

Fond memories of the Dallas Sidewalk Sale. And Yes, I do recall the high-powered horse trading for that particular ART-13!

Bob K7IRK  
Tillamook Oregon Shelter for Homeless Radios

----- Original Message -----

From: "Spencer Petri via BoatAnchors" <boatanchors at theporch.com>

To: <boatanchors at theporch.com>

Sent: Friday, November 27, 2015 5:50 PM

Subject: Re: [BoatAnchors] O'Scope primer

> In the late 80s, early 90s a group of us went to the Dallas sidewalk sale  
> almost every month. I bought a 545B for \$10. It was perfectly clean, I  
> surmised it must have been used in a clean room. Over the next months I  
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> ever did, one of the best bargains acquired, right up there with \$10  
> ART-13 and \$20 SP-600s. Hello K7IRK!

>

> de Pete WA5JCI

>

> ,

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> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

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This email has been checked for viruses by Avast antivirus software.

<https://www.avast.com/antivirus>

From wa1kbq at aol.com Sat Nov 28 09:08:10 2015

From: wa1kbq at aol.com (Greg Gore)

Date: Sat, 28 Nov 2015 09:08:10 -0500

Subject: [BoatAnchors] O'Scope primer

In-Reply-To: <565912C7.8060400@att.net>

Message-ID: <1514e6c2a24-1fba-8c74@webprd-a67.mail.aol.com>

I'll second that, I use a Tek 453 all the time here also. In fact I like them so much I've acquired several and all are working FB! The 453s are an excellent choice for BA hobby work, very reliable, easy to service, and there are no proprietary Tektronix IC's. Outside of replacing a stuck fan motor on one and replacing the usual missing or broken feet and other than lots of the usual expected cleaning work I didn't have to do much of anything else to any of them. Early 453s had some nuvistors but the later versions were fully transistorized.

Greg  
WA1KBQ

-----Original Message-----

From: Jack Antonio via BoatAnchors <boatanchors at theporch.com>  
To: boatanchors <boatanchors at theporch.com>  
Sent: Fri, Nov 27, 2015 9:34 pm  
Subject: Re: [BoatAnchors] O'Scope primer

My daily driver scope is a 453.

I learned to like the 453 at work, when I started at the TV station many moons ago, we had one to service remote microwave sites. That poor scope survived backpacks, ski lifts, helicopters, sno-cats, and other assorted indignities, but always worked like a champ. A few years later we bought a 453A, wider bandwidth and the TV sweep trigger, but we always took the older scope to the sites. Although not used much, it was still in service when I retired.

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Jack Antonio WA7DIA/4

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BoatAnchors mailing list  
BoatAnchors at theporch.com  
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From tarheel6 at msn.com Sat Nov 28 12:09:45 2015  
From: tarheel6 at msn.com (Tom Bridgers)  
Date: Sat, 28 Nov 2015 12:09:45 -0500

Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <mailman.335.1448674439.276.boatanchors@theporch.com>  
References: <mailman.335.1448674439.276.boatanchors@theporch.com>  
Message-ID: <BAY168-W64D4132755A4E6E23D81F90020@phx.gbl>

Does anyone happen to have the circuit to build a VTVM battery eliminator that'll work on a Heathkit IM-18 and similar?

I've looked on Google, and found a few complicated circuits. But not the one that I remember from years ago that uses a couple of resistors, a diode, and a cap. And is fed by the 6.3 volt AC for the VTVM tubes filaments....

There's one on Google that regulates the output via two series reverse connected diodes, but is that necessary?  
Thanks in advance,  
-Tom KE4RHH

From donreaves at gmail.com Sat Nov 28 12:40:11 2015  
From: donreaves at gmail.com (Don Reaves)  
Date: Sat, 28 Nov 2015 11:40:11 -0600  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <1514e6c2a24-1fba-8c74@webprd-a67.mail.aol.com>  
References: <565912C7.8060400@att.net>  
<1514e6c2a24-1fba-8c74@webprd-a67.mail.aol.com>  
Message-ID: <CAEj02LZx\_zN9XxZPHGo0xuK9Nxhh5JkG6yqQhedcLuQ\_K=fpBQ@mail.gmail.com>

This scope thread is great. Here's my contribution.

My all time favorite Tek scope is a 465. Back in the late 80s when I did tech work for a software company that provided Pertec and Control Data 5 and 5 storage drives (5 MB removable cartridge, 5 MB fixed, installed in a desk sized box), my job was to keep those drives repaired and properly aligned. Alignment consisted of a special alignment cartridge, a scope, a small brass hammer to gently tap on alignment points of a heavy duty voice coil flying head positioner while observing for a symmetrical cat's eye pattern on the scope. That 465, purchased used from an ad in the Yellow Sheets (remember those?) traveled with me coast to coast often by air, both commercial and private. I refused to check my toolkit and scope so they came on board as carry-ons. Can you imagine now trying to board a commercial flight with a briefcase sized collection of screwdrivers, nut drivers, wrenches, soldering equipment, voltmeters, etc, and a scope with a pouch full of probes and adapters? I had all this equipment lashed to a luggage dolly, and it fit nicely in the coat closet of most aircraft. No one gave it a second thought back then, except the scope and tools were



conversation starters in terminals waiting for flights. When the software company got bought out and drive technology advanced beyond big 5 MB drives the scope was no longer needed so I kept it for my radio hobby.

I still have my Yellow Sheet 465, and though it is a bit worn (loosey goosey switch contacts and a noisy fan) it works just as well today as it did 25 years ago. I've never had the covers off.

Recently I came into a pair of 7704 mainframe scopes and they have rapidly become the scope of choice to sit on the workbench. Plug-ins are cheap and plentiful and these 200 MHZ scopes will probably be the last I ever need to obtain.

I bought an all or nothing estate collection a few years back to get a couple of CE-100V transmitters from the collection and in the mix was a Tektronix refurbished 535. Its still in the factory box and some day I'll get the space and time to break it out and give it a good run.

Don W5OR WD2XSH/15

From gumbear at pacbell.net Sat Nov 28 14:08:13 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 28 Nov 2015 11:08:13 -0800  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <BAY168-W64D4132755A4E6E23D81F90020@phx.gbl>  
References: <mailman.335.1448674439.276.boatanchors@theporch.com>  
<BAY168-W64D4132755A4E6E23D81F90020@phx.gbl>  
Message-ID: <35BCCFD1933547F782CD14C0CE8CBE91@KB6NAX>

> .....Does anyone happen to have the circuit to build a VTVM battery eliminator that'll work on a Heathkit IM-18 and similar? .....

I still have the V7-A I built in high school a geological age ago and I still use it occasionally with a high voltage probe to measure CRT voltages. I've changed the battery no more than a half dozen times over the years. I've been fantastically lucky to not have had a corrosion attack inside the meter. Great little VTVM, it did so much to help me understand electronics.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From navy.radio at gmail.com Sat Nov 28 15:30:02 2015  
From: navy.radio at gmail.com (Nick England)  
Date: Sat, 28 Nov 2015 15:30:02 -0500  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <CAEj02LZx\_zN9XxZPHGo0xuK9Nxhh5JkG6yqQhedcLuQ\_K=fpBQ@mail.gmail.com>  
References: <565912C7.8060400@att.net>  
<1514e6c2a24-1fba-8c74@webprd-a67.mail.aol.com>  
<CAEj02LZx\_zN9XxZPHGo0xuK9Nxhh5JkG6yqQhedcLuQ\_K=fpBQ@mail.gmail.com>  
Message-ID: <CAB55hNdYzHMnEUiS9i0S8qmKDtSF6hxmQs4GHotd0qWjT4U=xQ@mail.gmail.com>

Air travel with tools and Tek 475. Oh yeah. Been there. Done that. Got the million-miler tee shirt. Helpful hint: always explain that gadget in your tool kit is a wire wrap TOOL, not a wire wrap gun.

On Saturday, November 28, 2015, Don Reaves via BoatAnchors <boatanchors at theporch.com>

>

> That 465, purchased used from an ad in the Yellow  
> Sheets (remember those?) traveled with me coast to coast often by air, both  
> commercial and private. I refused to check my toolkit and scope so they  
> came on board as carry-ons. Can you imagine now trying to board a  
> commercial flight with a briefcase sized collection of screwdrivers, nut  
> drivers, wrenches, soldering equipment, voltmeters, etc, and a scope with a  
> pouch full of probes and adapters? I had all this equipment lashed to a  
> luggage dolly, and it fit nicely in the coat closet of most aircraft. No  
> one gave it a second thought back then, except the scope and tools were  
> conversation starters in terminals waiting for flights.

>

--

Nick England K4NYW  
www.navy-radio.com

From jim.isbell at gmail.com Sat Nov 28 16:00:29 2015  
From: jim.isbell at gmail.com (Jim Isbell, W5JAI)  
Date: Sat, 28 Nov 2015 15:00:29 -0600  
Subject: [BoatAnchors] O'Scope primer  
In-Reply-To: <CAB55hNdYzHMnEUiS9i0S8qmKDtSF6hxmQs4GHotd0qWjT4U=xQ@mail.gmail.com>  
References: <565912C7.8060400@att.net>  
<1514e6c2a24-1fba-8c74@webprd-a67.mail.aol.com>  
<CAEj02LZx\_zN9XxZPHGo0xuK9Nxhh5JkG6yqQhedcLuQ\_K=fpBQ@mail.gmail.com>  
<CAB55hNdYzHMnEUiS9i0S8qmKDtSF6hxmQs4GHotd0qWjT4U=xQ@mail.gmail.com>  
Message-ID: <CAB+LbZBV6e+f50\_DUHenCDws9ZzF=d5Pkhsfhhbm0iKHH7bUTTw@mail.gmail.com>

I remember traveling USA to England to Greece and back carrying a 12 to 115V inverter to power my wifes hair dryer on a leased sailboat. It was about the size of a cigar box, covered with cooling fins with a couple of toggles and a red light on one end and painted FLAT BLACK. Carried it in my carry on luggage. Today she would have to go with wet hair.

On Sat, Nov 28, 2015 at 2:30 PM, Nick England via BoatAnchors <boatanchors at theporch.com> wrote:

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> Air travel with tools and Tek 475. Oh yeah. Been there. Done that. Got the
> million-miler tee shirt. Helpful hint: always explain that gadget in your
> tool kit is a wire wrap TOOL, not a wire wrap gun.
>
> On Saturday, November 28, 2015, Don Reaves via BoatAnchors <
> boatanchors at theporch.com>
> >
> > That 465, purchased used from an ad in the Yellow
> > Sheets (remember those?) traveled with me coast to coast often by air,
> > both
> > commercial and private. I refused to check my toolkit and scope so they
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> > commercial flight with a briefcase sized collection of screwdrivers, nut
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> > pouch full of probes and adapters? I had all this equipment lashed to a
> > luggage dolly, and it fit nicely in the coat closet of most aircraft. No
> > one gave it a second thought back then, except the scope and tools were
> > conversation starters in terminals waiting for flights.
> >
> >
> >
> --
> Nick England K4NYW
> www.navy-radio.com
> -----
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>
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From k4pf at juno.com Sat Nov 28 16:17:15 2015  
From: k4pf at juno.com (k4pf at juno.com)  
Date: Sat, 28 Nov 2015 21:17:15 GMT  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
Message-ID: <20151128.161715.22780.0@webmail04.vgs.unttd.com>

> Tom Bridgers <tarheel6 at msn.com wrote>

Does anyone happen to have the circuit to build a VTVM battery eliminator that'll work on a Heathkit IM-18 and similar?

<snip> And is fed by the 6.3 volt AC for the VTVM tubes filaments. There's one on Google that regulates the output via two series reverse connected diodes, but is that necessary?

Hi,

The two series silicon diodes serving as a voltage regulator would be +forward+ biased, each with a voltage drop of about 0.6V. Mainly they would be included to limit the open circuit voltage during Ohms testing. Without the diodes, you'd have 8 or 9V DC open circuit when derived from the 6.3VAC.

The diodes reduce the chance of popping the base-emitter junction during the Ohms check of a transistor (when reverse connected).

You should still be able to zero the meter with a 1.2V voltage source.

73,

Ed Knobloch

From gumbear at pacbell.net Sat Nov 28 19:07:07 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Sat, 28 Nov 2015 16:07:07 -0800

Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?

In-Reply-To: <20151128.161715.22780.0@webmail04.vgs.unttd.com>

References: <20151128.161715.22780.0@webmail04.vgs.unttd.com>

Message-ID: <1396BEE02EEA4A3DB301E8391A516780@KB6NAX>

> .....The two series silicon diodes serving as a voltage regulator would be +forward+ biased, each with a voltage drop of about 0.6V. Mainly they would be included to limit the open circuit voltage during Ohms testing. Without the diodes, you'd have 8 or 9V DC open circuit when derived from the 6.3VAC.

The diodes reduce the chance of popping the base-emitter junction during the Ohms check of a transistor (when reverse connected).

> You should still be able to zero the meter with a 1.2V voltage source.

Two birds with one pebble: I would use a LM-317 regulator chip set for 1.56 volts (the lowest is 1.23 volts) so you can also check meter calibration occasionally.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From vilgotch at bigpond.net.au Sun Nov 29 02:45:28 2015  
From: vilgotch at bigpond.net.au (Morris Odell)  
Date: Sun, 29 Nov 2015 18:45:28 +1100  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <20151128.161715.22780.0@webmail04.vgs.unttd.com>  
References: <20151128.161715.22780.0@webmail04.vgs.unttd.com>  
Message-ID: <000901d12a79\$ea9be630\$bfd3b290\$@bigpond.net.au>

I would be careful relying on 2 silicon diodes depending on what the tolerance of the circuit is to a higher output voltage. Two Si diodes can still have a higher shunt voltage than 1.2 if enough current flows through them, especially under fault conditions. In sensitive circuits such as 1.4 volt battery tube filaments, that can be enough to burn out the filament. Much better I think, to use Arden's suggested fix of a LM317 to set the voltage properly and don't forget the protection diodes around it as suggested in the data sheet. The extra cost is minimal.

73, Morris

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The two series silicon diodes serving as a voltage regulator would be +forward+ biased, each with a voltage drop of about 0.6V. Mainly they would be included to limit the open circuit voltage during Ohms testing.

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From hankvc at lostwells.net Sun Nov 29 11:49:05 2015  
From: hankvc at lostwells.net (hankvc at lostwells.net)  
Date: Sun, 29 Nov 2015 09:49:05 -0700 (MST)  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <BAY168-W64D4132755A4E6E23D81F90020@phx.gbl>  
Message-ID: <201511291649.tATGn57W016518@julie.lostwells.net>

Tom Bridgers via BoatAnchors said:

>  
> Does anyone happen to have the circuit to build a VTVM battery  
> eliminator that'll work on a Heathkit IM-18 and similar?  
>  
> I've looked on Google, and found a few complicated circuits.  
> But not the one that I remember from years ago that uses a couple  
> of resistors, a diode, and a cap. And is fed by the 6.3 volt AC for  
> the VTVM tubes filaments....  
>  
> There's one on Google that regulates the output via two series  
> reverse connected diodes, but is that necessary?  
> Thanks in advance,

Some years ago, I gave some thought to coming up with an internal supply to replace the 1.5 volt D cell used in RCA VTVM's. As I recall, the main issue was needing a low-resistance 1.5 source for the R X1 current, which is rather substantial---as I recall, about the same as for a Simpson 260, around 150-200 ma. for R X1 with probes shorted.

As I recall, I did dope out a circuit using an LM regulator, but felt that trying to build one up and test it was more work than it was worth. As I recall, I had some concern about the additional idling load on the power transformer.

In any event, all my RCA VTVM's have 1.5 volt Duracells in clip holders, which last maybe five years or more. My recollection is that the Heath VTVM's use almost the same circuit as the RCA WV-97's. A couple of them got clip holders bought from Mouser to replace corroded contacts, and the Duracells haven't leaked (yet).

Hank

From john.shriver at gmail.com Sun Nov 29 12:46:23 2015  
From: john.shriver at gmail.com (John Shriver)  
Date: Sun, 29 Nov 2015 12:46:23 -0500  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <201511291649.tATGn57W016518@julie.lostwells.net>  
References: <201511291649.tATGn57W016518@julie.lostwells.net>  
Message-ID: <810992FB-9828-49EB-8494-97A4E4B0DC23@gmail.com>

I still just put a new Eveready carbon-zinc cell in my RCA Junior Volt-Ohmyst every decade or so. (They're not easy to find, but still made.) It sits in a capacitor clamp, you wrap the base of the cell in friction tape, solder a wire to the bottom, and run it up the side so the capacitor clamp grabs it. The wire to the switch is soldered to the top button.

Any more modern cell would probably not like being soldered to. I can't imagine a Duracell taking to it.

Never any sign of it leaking.

From wa9jml at frontier.com Sun Nov 29 13:38:32 2015  
From: wa9jml at frontier.com (Steve Berg)  
Date: Sun, 29 Nov 2015 12:38:32 -0600  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <000901d12a79\$ea9be630\$bfd3b290\$@bigpond.net.au>  
References: <20151128.161715.22780.0@webmail04.vgs.unttd.com>  
<000901d12a79\$ea9be630\$bfd3b290\$@bigpond.net.au>  
Message-ID: <565B4628.7080002@frontier.com>

Should anyone here want a bit of a challenge, I have a Heath V-5 VTVM, without probes, that has been sitting for years. I am thinning out my list of projects, and realize that this unit, and some others needs a new home. It is free for the cost of shipping from zip code 60115.

73,

Steve WA9JML

From spr at earthlink.net Sun Nov 29 13:45:24 2015  
From: spr at earthlink.net (Scott Robinson)  
Date: Sun, 29 Nov 2015 10:45:24 -0800  
Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?  
In-Reply-To: <201511291649.tATGn57W016518@julie.lostwells.net>  
References: <201511291649.tATGn57W016518@julie.lostwells.net>  
Message-ID: <565B47C4.4090409@earthlink.net>

Hi Hank,

The idling current of an LM317 is under 10 mA, mostly the current in the divider chain, so the transformer wouldn't mind that. If you held the ohmmeter leads together on the X1 range for a while, the 150mA would probably pull the heater voltage down a bit and the cathode would cool off, but not much. The total normal load on the heater winding is 300 mA for the 12AX7, 150 for the 6AL5, and 150 for the #47 pilot light, total 600 mA. An extra 150 mA is not a large change, and for normal use would probably have not effect. I'd phase the heater winding leads so that the ML317 half wave rectified current would tend to cancel out the DC in

the transformer due to the half wave B+ current rather than adding to it.

My Heath V-7A is not converted for a simpler reason: laziness, and alkaline C cells last a long time in this service.

I will add that my V-7A got drifts and unstable in gain for a while, and I finally replaced every single resistor on the PCB (not the dividers on the range switch) with new carbon film 5% parts and ceramic caps and presto! Stable again. I have no idea which parts had gotten flaky; after changing a few likely candidates to limited effect, changing them all was easy to do.

Yours for fun with old test equipment,

/scott

On 11/29/15 8:49 AM, Hank Van Cleef via BoatAnchors wrote:

> As I recall, I did dope out a circuit using an LM regulator, but felt  
> that trying to build one up and test it was more work than it was worth.  
> As I recall, I had some concern about the additional idling load on the  
> power transformer.

From gumbear at pacbell.net Sun Nov 29 14:57:50 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Sun, 29 Nov 2015 11:57:50 -0800

Subject: [BoatAnchors] Heathkit VTVM Battery Replacement?

In-Reply-To: <565B47C4.4090409@earthlink.net>

References: <201511291649.tATGn57W016518@julie.lostwells.net>

<565B47C4.4090409@earthlink.net>

Message-ID: <B551F4DD459649DFAF53D5F185E62D64@KB6NAX>

> .....I will add that my V-7A got drifts and unstable in gain for a  
> while, and

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I can't repeat this too often, that carbon comp resistors suffer from rot more than any other type. I've even found them to be non linear in rare cases. I once was perplexed why the square wave response in an audio preamplifier circuit was oddly distorted. My last resort was to replace resistors one at a time until I found the offender. An ohmmeter check did not reveal anything useful about the miscreant resistor.



Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
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his treatment of animals.  
?Immanuel Kant

From donreaves at gmail.com Sun Nov 29 16:12:47 2015  
From: donreaves at gmail.com (Don Reaves)  
Date: Sun, 29 Nov 2015 15:12:47 -0600  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <810992FB-9828-49EB-8494-97A4E4B0DC23@gmail.com>  
References: <201511291649.tATGn57W016518@julie.lostwells.net>  
<810992FB-9828-49EB-8494-97A4E4B0DC23@gmail.com>  
Message-ID: <CAEj02LaDso7G5Z-az5SYpvt30\_8Y0qydet0sL7HvmBzwk02MZA@mail.gmail.com>

For D cell replacements in meters I use an adapter, to convert from D cell to AA size, and then substitute one of the modern battery types, usually a lithium cell. I've never had a lithium cell leak like these dang carbon zinc or alkaline consumer batteries are prone to do.

These snap around adapters are inexpensive, when sourced from ebay or amazon. I got this bright idea when I noticed that the majority of retail blister packs of high priced lithium D cell batteries are nothing more than an AA surrounded with a plastic D cell sized shell.

A bonus is when you knock your Triplet 630 off the workbench, there is no heavy D cell to come loose and break off parts of the meters innards when it lands with a thud on the floor.

And, lithium batteries claim to hold their charge for 20 years. I have not tested that premise. :-)

--

Don Reaves W50R WD2XSH/15

From smithab11 at comcast.net Sat Nov 28 12:10:14 2015  
From: smithab11 at comcast.net (B. Smith)  
Date: Sat, 28 Nov 2015 12:10:14 -0500  
Subject: [BoatAnchors] O'Scope primer  
Message-ID: <3ve2io94wuu14jn9kfngpds6.1448730614281@email.android.com>

Great story enjoyed it.  
Breck k4che

On Nov 27, 2015 7:59 PM, Arden Allen via BoatAnchors <boatanchors at theporch.com> wrote:

>  
> My first encounter with an oscilloscope where I could actually manipulate  
> the controls was in the Navy where the outfit I was in could buy whatever  
> they wanted so one day a brand new Tek 945B, the militarized version of the  
> 545B, showed up on the avionics shope.? It was a novelty, we had no use for  
> it.? After playing with the scope for a while by serendipity I was tasked to  
> lug an ARC-27 to the AMD lab for repairs.? That was my golden chance.? I  
> asked the Marine sergeant in charge of the lab if I could get transferred  
> temporarily (TAD) from my Navy outfit (Pacific Missile Range Facility,  
> Hawaii) so I could put my school training to use repairing radios.? I got  
> transferred so fast I didn't have a chance to say, "so long, suckers" to my  
> outfit.? The AMD had a pile of ARC-27's they couldn't find anyone who could  
> repair them and Barber's Point NAS couldn't repair one that would last more  
> than one flight in an A4 or F8 the Marines were flying.? Too may planes  
> "down" was the problem.? I was treated like royalty the day I got my first  
> ARC-27 off the bench.? The ARC-27 bench had one of those suitcase 'scopes  
> with the tiny screen that was as useful as a concrete pile for working on  
> UHF radios, no bandwidth, no sensitivity and no triggered sweep.? The 945B  
> had spoiled me rotten.? Not much later I penetrated the depths of the shop  
> stock room and found to my delight a small collection of unused Tek scopes.  
> I didn't flinch as I pounced on a 531A and dragged it to my bench.? Wow, did  
> that scope make me happy.? I even coupled RF from the ARC-27's under repair  
> into one of the vertical plates of the 531A so I could observe modulation  
> envelopes which enabled me to see just how good the 829B was modulating the  
> 2C39 finals.? It worked perfectly as the vertical delay line isolated the  
> UHF RF from the rest of the scope.? That was my second love affair with Tek  
> scopes.

>  
> A few years after I got out of the Navy I bought a used 503 by chance from  
> my boss at work for about 1/5 its new price.? That became my third love  
> affair with Tek scopes and I still have that 503 and several others because  
> one always need another spare and I've restored bunches of them over the  
> years for the sheer joy of bringing those beautifully humble but oh so  
> useful scopes back to health.? I've blabbed enough for now so I'll talk  
> about my other Tek love affairs later.

>  
> Arden Allen  
> KB6NAX

>  
> He who is cruel to animals becomes  
> hard also in his dealings with men.  
> We can judge the heart of a man by  
> his treatment of animals.

> ?Immanuel Kant  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From WA5CAB at cs.com Sun Nov 29 23:47:07 2015  
From: WA5CAB at cs.com (WA5CAB at cs.com)  
Date: Sun, 29 Nov 2015 23:47:07 -0500  
Subject: [BoatAnchors] VTVM Battery Replacement?  
Message-ID: <120508.6883662d.438d2ecb@cs.com>

That sounds like a great idea except that back before my day-job went away, we were buying something like \$100K per year of Double-D Lithiums, and the standard non-rechargeable lithium batteries were 3.6 volts per cell. That's more than double that of the LeClanche and Alkaline cells. And I think beyond the range of the zero-set pots in a Simpson 260.

Robert Downs - Houston  
wa5cab dot com (Web Store)  
MVPA 9480

In a message dated 11/29/2015 15:13:03 PM Central Standard Time, boatanchors at theporch.com writes:  
> For D cell replacements in meters I use an adapter, to convert from D  
> cell  
> to AA size, and then substitute one of the modern battery types, usually a  
> lithium cell. I've never had a lithium cell leak like these dang carbon  
> zinc or alkaline consumer batteries are prone to do.  
>  
> These snap around adapters are inexpensive, when sourced from ebay or  
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> And, lithium batteries claim to hold their charge for 20 years. I have  
> not  
> tested that premise. :-)  
>  
> --  
>  
> Don Reaves W5OR WD2XSH/15

From donreaves at gmail.com Mon Nov 30 01:22:50 2015  
From: donreaves at gmail.com (Don Reaves)  
Date: Mon, 30 Nov 2015 00:22:50 -0600  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <120508.6883662d.438d2ecb@cs.com>  
References: <120508.6883662d.438d2ecb@cs.com>  
Message-ID: <CAEj02Lbw6N0g1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>

Robert, et.al,

I use Energizer L91 batteries, which are non-rechargables, nominal 1.5V.

<http://data.energizer.com/PDFs/l91.pdf>

I bought my last pack of 4 here:

<http://www.amazon.com/Energizer-Ultimate-Lithium-Batteries-High-Tech/dp/B00003IEME>

> Don Reaves W50R WD2XSH/15  
>  
>

From WA5CAB at cs.com Mon Nov 30 01:41:37 2015  
From: WA5CAB at cs.com (WA5CAB at cs.com)  
Date: Mon, 30 Nov 2015 01:41:37 -0500  
Subject: [BoatAnchors] VTVM Battery Replacement?  
Message-ID: <1251c8.73c1dedf.438d49a1@cs.com>

OK. Things change when you've been out of touch.

In a message dated 11/30/2015 00:22:51 AM Central Standard Time,  
donreaves at gmail.com writes:

> Robert, et.al,  
> I use Energizer L91 batteries, which are non-rechargables, nominal 1.5V.  
>  
>  
> <http://data.energizer.com/PDFs/l91.pdf>  
>  
>  
>  
> I bought my last pack of 4 here:  
>  
> <http://www.amazon.com/Energizer-Ultimate-Lithium-Batteries-High-Tech/dp/B00003IEME>  
>  
> >> >>> Don Reaves W50R WD2XSH/15

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>

Robert & Susan Downs - Houston  
wa5cab dot com (Web Store)  
MVPA 9480

From 1oldlens1 at ix.netcom.com Mon Nov 30 02:01:50 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Sun, 29 Nov 2015 23:01:50 -0800  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <CAEj02Lbw6N0g1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>  
References: <120508.6883662d.438d2ecb@cs.com>  
<CAEj02Lbw6N0g1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>  
Message-ID: <565BF45E.5080801@ix.netcom.com>

FWIW, for some time I have had problems with leaking Duracell AA, AAA and D batteries, IMO at one time the best. I will no longer use them and have found leakers in boxes of unused batteries. The same for Costco Kirkland batteries, which I believe are rebranded Duracell. I have been using Energizer and Ray O Vac but have not used either long enough to be sure of their long-term performance. However, some Duracell batteries started leaking within a couple of months of buying them. 9 Volt cells seem to be OK.

Perhaps Duracell (whoever makes them now) has fixed this problem but I won't use their stuff until I am sure I won't have equipment ruined by leakers.

On 11/29/2015 10:22 PM, Don Reaves via BoatAnchors wrote:

> Robert, et.al,  
>  
> I use Energizer L91 batteries, which are non-rechargables, nominal 1.5V.  
>  
> <http://data.energizer.com/PDFs/l91.pdf>  
>  
> I bought my last pack of 4 here:  
> <http://www.amazon.com/Energizer-Ultimate-Lithium-Batteries-High-Tech/dp/B000003IEME>

>  
>> Don Reaves W5OR WD2XSH/15  
>>  
>>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at theporch.com  
> <https://minime.theporch.com/mailman/listinfo/boatanchors>  
>

--  
Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From k9fd at flex.com Mon Nov 30 02:18:11 2015  
From: k9fd at flex.com (Merv Schweigert)  
Date: Sun, 29 Nov 2015 21:18:11 -1000  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <565BF45E.5080801@ix.netcom.com>  
References: <120508.6883662d.438d2ecb@cs.com>  
<CAEj02Lbw6NOg1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>  
<565BF45E.5080801@ix.netcom.com>  
Message-ID: <565BF833.2010804@flex.com>

Dittos on the junk being made by Duracell, I have had them leak all over and still have a charge, so far they have ruined two Nye Viking 5000 watt meters, MFJ259B, several flashlights, TV remotes, etc. these were new batteries bought in packs of 20 or more, Duracells answer is that the batteries are made in many different countries and yes some are not good, but they are not willing to fix or pay for damages in any fashion without every battery or serial number that went bad. My fault perhaps for not saving leaking batteries, was so ticked off they went on the trash right away.  
YMMV 73 Merv K9FD/KH6

> FWIW, for some time I have had problems with leaking Duracell AA, AAA  
> and D batteries, IMO at one time the best. I will no longer use them  
> and have found leakers in boxes of unused batteries. The same for  
> Costco Kirkland batteries, which I believe are rebranded Duracell. I  
> have been using Energizer and Ray O Vac but have not used either long

> enough to be sure of their long-term performance. However, some  
> Duracell batteries started leaking within a couple of months of buying  
> them. 9 Volt cells seem to be OK.  
> Perhaps Duracell (whoever makes them now) has fixed this problem  
> but I won't use their stuff until I am sure I won't have equipment  
> ruined by leakers.  
>

From WA5CAB at cs.com Mon Nov 30 12:19:48 2015  
From: WA5CAB at cs.com (WA5CAB at cs.com)  
Date: Mon, 30 Nov 2015 12:19:48 -0500  
Subject: [BoatAnchors] VTVM Battery Replacement?  
Message-ID: <183f93.223fe9e4.438ddf34@cs.com>

I had a Duracell D-cell leaker in one of my Simpson 260's I don't know exactly when it started. I have been changing the batteries about every two years. But a few weeks ago, I noticed that one of the two 260's that normally hang on the wall right above the bench work area was pegged downscale. Didn't matter what I did externally. I opened it up and found the culprit and washed the thing down with WD-40 but haven't had time to disassemble it yet. After a few days the meter gradually drifted back to zero. The batteries were installed in 2014 but I don't know when I actually bought them. I also have a 3-cell MagLite that I cannot get the bottom plug off of. Its cells may have come from the same batch.

In a message dated 11/30/2015 01:02:15 AM Central Standard Time, boatanchors at theporch.com writes:

> FWIW, for some time I have had problems with leaking Duracell AA,  
> AAA and D batteries, IMO at one time the best. I will no longer use  
> them and have found leakers in boxes of unused batteries. The same for  
> Costco Kirkland batteries, which I believe are rebranded Duracell. I  
> have been using Energizer and Ray O Vac but have not used either long  
> enough to be sure of their long-term performance. However, some Duracell  
> batteries started leaking within a couple of months of buying them. 9  
> Volt cells seem to be OK.  
> Perhaps Duracell (whoever makes them now) has fixed this problem  
> but I won't use their stuff until I am sure I won't have equipment  
> ruined by leakers.  
>

Robert Downs - Houston  
wa5cab dot com (Web Store)  
MVPA 9480

From dave at horsfall.org Mon Nov 30 12:50:08 2015  
From: dave at horsfall.org (Dave Horsfall)

Date: Tue, 1 Dec 2015 04:50:08 +1100 (EST)  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <565BF833.2010804@flex.com>  
References: <120508.6883662d.438d2ecb@cs.com>  
<CAEj02Lbw6N0g1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>  
<565BF45E.5080801@ix.netcom.com> <565BF833.2010804@flex.com>  
Message-ID: <alpine.BSF.2.11.1512010445280.27895@aneurin.horsfall.org>

Interesting thread on Duracells... They're my brand of choice (although Panasonic are now putting out a good line), and the only trouble I've had is in stuff like long-forgotten torches etc. I'll certainly keep an eye on 'em though. and return the corpses if necessary.

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From 1oldlens1 at ix.netcom.com Mon Nov 30 13:11:11 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Mon, 30 Nov 2015 10:11:11 -0800  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <alpine.BSF.2.11.1512010445280.27895@aneurin.horsfall.org>  
References: <120508.6883662d.438d2ecb@cs.com>  
<CAEj02Lbw6N0g1eMUxzqrB7U3k7HcSdh2NrX7cEJS0M3\_YE-CVA@mail.gmail.com>  
<565BF45E.5080801@ix.netcom.com> <565BF833.2010804@flex.com>  
<alpine.BSF.2.11.1512010445280.27895@aneurin.horsfall.org>  
Message-ID: <565C913F.4090107@ix.netcom.com>

Given enough time almost all dry cells will corrode and leak but it often takes years. The Duracells I've had trouble with were not very old and were not used to anything like their capacity. I used Duracells because they were recommended to me by a friend who did motion picture location sound and found them to be the longest lived of the brands. He weighs cells and found them to be the heaviest. This sort of makes sense. In his application batteries are exhausted quickly so none were very old. Nonetheless, I used Duracells in equipment where the drain was low and expected life very long, a VOM is a good example, or a flashlight used only for emergencies. I am used to inspecting batteries to avoid the occasional leaker. A couple of years ago I began to discover a LOT of leaking batteries and consequent damage, all were Duracells of no great age. Perhaps they just seem to have been worse than others because I was not using other brands much but recently I began to find leaking batteries in boxes of new, or fairly new, spare batteries. I stopped using Duracell and Kirkland, a house brand of Costco stores that I believe to be re-branded Duracells. Duracell makes a deluxe brand called ProCell. These are sold for industrial purposes and are hard to find. They may be better than the Duracell brand, and, I suspect, may be what was sold as Duracell in the past, the current



Duracell being something made to keep the prices down. Bad business. Eveready who markets now as Energizer, and Ray-O-Vac seem to be made in the U.S. and so far have been reliable. The badly leaking batteries seem to be mostly A, AA and D size, I have not observed problems with 9 volt batteries.

I should note that despite living in the big city electrical power in my neighborhood is not very reliable. I think LADWP may finally be addressing this but my experience over more than thirty years here is that we get an extended power outage at least once a year after the first or second heavy rain and shorter outages fairly often. So, I have a large collection of working flashlights and battery lanterns. This is also a precaution in case of earthquakes. Serious earthquakes, severe enough to knock out power, are rare but I've been through at least three here and severe wind storms are a lot more common. So, I feel happier if I have emergency lights. To keep the flashlights and battery operated radios going I have a drawer full of various size batteries and replace them often enough to keep them fresh. I am sure there are others who use a great many more batteries than I do, It would be interesting and useful to know their experience with various brands.

On 11/30/2015 9:50 AM, Dave Horsfall via BoatAnchors wrote:

> Interesting thread on Duracells... They're my brand of choice (although  
> Panasonic are now putting out a good line), and the only trouble I've had  
> is in stuff like long-forgotten torches etc. I'll certainly keep an eye  
> on 'em though. and return the corpses if necessary.  
>

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From gumbear at pacbell.net Mon Nov 30 13:36:02 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Mon, 30 Nov 2015 10:36:02 -0800  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <183f93.223fe9e4.438ddf34@cs.com>  
References: <183f93.223fe9e4.438ddf34@cs.com>  
Message-ID: <AD6B29DECEA34DBCA72C88638FDAA5AD@KB6NAX>

> .....The batteries were installed in 2014 but I don't know when I  
> actually bought them. I also  
have a 3-cell MagLite that I cannot get the bottom plug off of. Its cells  
may have come from the same batch. ....

I think it's safe to say we all know where those batteries came from.

Global trade is mainly a device for corporations to avoid environment, consumer protection and tax laws. I'm checking everything now to see if any have Duracells. Into the trash they will go.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From gumbear at pacbell.net Mon Nov 30 14:53:38 2015  
From: gumbear at pacbell.net (Arden Allen)  
Date: Mon, 30 Nov 2015 11:53:38 -0800  
Subject: [BoatAnchors] Duracell  
Message-ID: <C7F0FF3E00EF411387E6EC8FAE9FA70D@KB6NAX>

I looked up Consumer Reports ratings on alkaline batteries. They only had ratings on AA cells.

Duracell Quantum ? 2.5 out of 5 score from three reviewers with comments:

?I bought a large pack from Sam's Club based on CR's recommendation and found that most in the pack had no juice (dead) and the rest only worked for a day or so. I replaced them with the old style copper tops and they are working well. I'll try the Quantum again in the future to see if they are as good as CR says they are.?

?Will not last in low usage applications without leaking.?

There were no reviews for Duracell Coppertops.

Kirkland Signature got plenty of poo-poops from reviewers:

Kirkland Signature (CR ?Best Buy?) ? 1.9 out of 5 score from 10 reviewers with the following comments:

?I have had these batteries leak in multiple applications - from flashlights to cameras, etc - after only a few months while the use by date was many years in the future!?

?Installed batteries in portable radio. Batteries leaked from negative end of cell after about 6 months of minor use. ....?.

?These batteries leak and will ruin your electronics. They would be good for a one

day use, but do not leave them installed in any device that you want to keep.?

?Have had numerous Duracell and Kirkland AA batteries leak while brand new. They have 2020 and 2024 expiration dates on them.?

?they are cheap but you better take them out after each use. and no! other batteries do not leak after each use either. Kirkland will leak every time. I have had it with them and threw that last batch away unused! I will never buy them again.?

?I use these batteries in remote controls, flashlights, and digital recorders. Kirkland is the only brand I have used that leak before they are dead. I experience leaking and corrosion about three years before reaching the "Best if installed by" date on the battery. ....?

?I've been a Costco member since they opened their first store here some years ago. As a photographer and a grandpa with 3 grandkids, I use a lot of AA batteries for toys, camera flash units, and various other electronic gadgets. The Kirkland AA batteries have leaked consistently when left in my flash units .....?

?I used Kirkland alkalines for years until a recent package of AAAs had 5 cells that leaked. Any brand's cell could leak, but still . . .?

Well, it's either a conspiracy by the Batteries Matter Action Front or Duracell/Kirkland batteries really are spoiling a lot of gadgets.

Footnote: CR has over the years appeared to live in an ivory tower and doesn't know what really affects consumers in detrimental ways. To not rate batteries for long term disuse, one of the primary requirements for batteries, is hardly a service to CR subscribers.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From WA5CAB at cs.com Mon Nov 30 16:25:38 2015  
From: WA5CAB at cs.com (WA5CAB at cs.com)  
Date: Mon, 30 Nov 2015 16:25:38 -0500  
Subject: [BoatAnchors] VTVM Battery Replacement?  
Message-ID: <1992bd.6bdc792a.438e18d2@cs.com>

Yep. I have no doubt as to where!

In a message dated 11/30/2015 12:40:10 PM Central Standard Time,  
gumbear at pacbell.net writes:

> >.....The batteries were installed in 2014 but I don't know when I  
> >actually bought them. I also  
> have a 3-cell MagLite that I cannot get the bottom plug off of. Its cells  
>  
> may have come from the same batch. ....  
>  
> I think it's safe to say we all know where those batteries came from.  
> Global trade is mainly a device for corporations to avoid environment,  
> consumer protection and tax laws. I'm checking everything now to see if  
> any  
> have Duracells. Into the trash they will go.  
>  
> Arden Allen  
> KB6NAX

Robert & Susan Downs - Houston  
wa5cab dot com (Web Store)  
MVPA 9480

From dave at horsfall.org Mon Nov 30 16:38:03 2015  
From: dave at horsfall.org (Dave Horsfall)  
Date: Tue, 1 Dec 2015 08:38:03 +1100 (EST)  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <1992bd.6bdc792a.438e18d2@cs.com>  
References: <1992bd.6bdc792a.438e18d2@cs.com>  
Message-ID: <alpine.BSF.2.11.1512010830160.27895@aneurin.horsfall.org>

On Mon, 30 Nov 2015, Robert Downs WA5CAB via BoatAnchors wrote:

> Yep. I have no doubt as to where!

Thus prompted, I decided to survey my batteries, and the results are  
interesting.

9v Duracell: Malaysia. No known leaks.  
9v Energizer: USA. No known leaks.  
D Eclipse: China. New brand, so too early to tell.  
D Duracell: China. No leaks, but the AA ones certainly did.  
AA Panasonic: Thailand. New brand, so too early to tell.  
C Energizer: USA. No known leaks.

Hmmm...

--

Dave Horsfall DTM (VK2KFU) "Those who don't understand security will suffer."

From 1oldlens1 at ix.netcom.com Mon Nov 30 17:40:16 2015  
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)  
Date: Mon, 30 Nov 2015 14:40:16 -0800  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <alpine.BSF.2.11.1512010830160.27895@aneurin.horsfall.org>  
References: <1992bd.6bdc792a.438e18d2@cs.com>  
<alpine.BSF.2.11.1512010830160.27895@aneurin.horsfall.org>  
Message-ID: <565CD050.5010002@ix.netcom.com>

I just looked at some of the spares I have. All made in the USA. Including some Duracell Copertop, Ray-o-Vac, Kirkland, Eveready-Energizer. Duracell Pro-Cell are marked "Assembled in USA" whatever that means. I never thought to look at the leakers, just tossed them.

BTW, all the Duracell batteries are made by a division of Proctor & Gamble, producers of fake potato chips. (Pringles, if they still make them. Made of a mixture of grain and potato powder. I found the patent and have it somewhere, I think the idea was to keep the quality and cost consistent. Big business is sure full of ideas. Is it possible the batteries were made from the slurry used for Pringles?)

On 11/30/2015 1:38 PM, Dave Horsfall via BoatAnchors wrote:

> On Mon, 30 Nov 2015, Robert Downs WA5CAB via BoatAnchors wrote:  
>  
>> Yep. I have no doubt as to where!  
> Thus prompted, I decided to survey my batteries, and the results are  
> interesting.  
>  
> 9v Duracell: Malaysia. No known leaks.  
> 9v Energizer: USA. No known leaks.  
> D Eclipse: China. New brand, so too early to tell.  
> D Duracell: China. No leaks, but the AA ones certainly did.  
> AA Panasonic: Thailand. New brand, so too early to tell.  
> C Energizer: USA. No known leaks.  
>  
> Hmmm...

--

Richard Knoppow  
1oldlens1 at ix.netcom.com  
WB6KBL

From w4rl at bellsouth.net Mon Nov 30 17:42:14 2015  
From: w4rl at bellsouth.net (Robert)  
Date: Mon, 30 Nov 2015 16:42:14 -0600  
Subject: [BoatAnchors] VTVM Battery Replacement?  
In-Reply-To: <alpine.BSF.2.11.1512010830160.27895@aneurin.horsfall.org>  
References: <1992bd.6bdc792a.438e18d2@cs.com>  
<alpine.BSF.2.11.1512010830160.27895@aneurin.horsfall.org>  
Message-ID: <565CD0C6.10607@bellsouth.net>

Dave, thanks. Feedback short being only as to Brand.

I use the DURACELL Brand.

73 Robert W4RL

On 11/30/2015 3:38 PM, Dave Horsfall via BoatAnchors wrote:  
> On Mon, 30 Nov 2015, Robert Downs WA5CAB via BoatAnchors wrote:  
>  
>> Yep. I have no doubt as to where!  
> Thus prompted, I decided to survey my batteries, and the results are  
> interesting.  
>  
> 9v Duracell: Malaysia. No known leaks.  
> 9v Energizer: USA. No known leaks.  
> D Eclipse: China. New brand, so too early to tell.  
> D Duracell: China. No leaks, but the AA ones certainly did.  
> AA Panasonic: Thailand. New brand, so too early to tell.  
> C Energizer: USA. No known leaks.  
>  
> Hmmm...  
>

From gsantacana at gmail.com Mon Nov 30 20:41:52 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Mon, 30 Nov 2015 21:41:52 -0400  
Subject: [BoatAnchors] B+ on or off?  
Message-ID: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHjyM+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>

Back in the late 70s my BA benefactor and Elmer, who was also an excellent electronic technician specializing in communications gear and an extra class from that era, told me that I should always turn off B+ before a band change in our old receivers. He worked many years as a ship communication's officer and later in coastal marine communications centers. Later on he became chief of communications in the local power authority. I knew him at this time and seeing my interest in tube gear, this was late 70s, he

started to bring me a lot of rigs that he got from other hams but did not want for himself. Some of the goodies were AR88s, BC348s, Viking and Heath transmitters, one R390urr, Nationals, Collins etc, etc. No one wanted them so I got them for free and started my collection, restoration and plain admiration for this gear. I always remember that one day I was showing him the results one AR88 restoration and alignment. He knew these receivers by heart so his evaluation of my work was like passing a practical exam. Everything went well until I changed bands. The guy jumped back and asked me why I had not turned off the B+. He told me that since his early days in radio he was always told to do that and that it made sense not to switch with the B+ on. My response was that I saw no problem with that and the radio manuals did not mention it. His response was a grin and something like "well you go ahead and continue to do that but I told you". I remembered that event the other day and decided to ask the list if anyone ever heard of something like this.

BTW this guy was a 60WPM + CW expert and I think he's still around but I have not seen him in years. I also remember his laughter when he saw my first ever power supply built to power a TCS RX/TX pair, but it worked!

73s

Guido

Guido Santacana KP4FAR

From gumbear at pacbell.net Mon Nov 30 21:13:02 2015

From: gumbear at pacbell.net (Arden Allen)

Date: Mon, 30 Nov 2015 18:13:02 -0800

Subject: [BoatAnchors] B+ on or off?

In-Reply-To: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHjyM+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>

References: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHjyM+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>

Message-ID: <869160EBE2FF4FC09DC6D179D4402C4D@KB6NAX>

> .....The guy jumped back and asked me why I had not turned off the B+. He told me that since his early days in radio he was always told to do that and that it made sense not to switch with the B+ on. My response was that I saw no problem with that and the radio manuals did not mention it. His response was a grin and something like "well you go ahead and continue to do that but I told you". .....

Hmm, makes me wonder your elmer didn't explain the reason for his practice. It is a reasonable precaution. If any contacts in the band switch experience tiny arcs when making or breaking contact there is a bit of metal burned each occurrence. Eventually some serious damage will begin to happen as the contacting surfaces begin to grind each other as a result of burning debris deposits. Not such bad advice, IMO.

Arden Allen  
KB6NAX

He who is cruel to animals becomes  
hard also in his dealings with men.  
We can judge the heart of a man by  
his treatment of animals.  
?Immanuel Kant

From nielwiegand at aggienetwork.com Mon Nov 30 22:05:48 2015  
From: nielwiegand at aggienetwork.com (Niel Wiegand)  
Date: Mon, 30 Nov 2015 21:05:48 -0600  
Subject: [BoatAnchors] B+ on or off?  
In-Reply-To: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHym+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>  
References: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHym+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>  
Message-ID: <565D0E8C.500000@aggienetwork.com>

With a National HRO it is esp. important to turn off the B+. As you pull  
a coil out or insert a coil is is possible to get across high voltage.

Niel - W0VLZ  
<https://www.prismnet.com/~nielw/wa5vlz.htm>

Guido Santacana via BoatAnchors wrote:  
> Back in the late 70s my BA benefactor and Elmer, who was also an excellent  
> electronic technician specializing in communications gear and an extra  
> class from that era, told me that I should always turn off B+ before a band  
> change in our old receivers.

From gsantacana at gmail.com Mon Nov 30 22:38:25 2015  
From: gsantacana at gmail.com (Guido Santacana)  
Date: Mon, 30 Nov 2015 23:08:25 -0430  
Subject: [BoatAnchors] B+ on or off?  
In-Reply-To: <565D0E8C.500000@aggienetwork.com>  
References: <CA01yix2sX4qsX4u9tSWw8Qepu+sDHym+MhTBHx6Qoy5NDsoaQ@mail.gmail.com>  
<565D0E8C.500000@aggienetwork.com>  
Message-ID: <CA01yix1P8vqSN\_PFxor3tNCpTpsdC9XQ9\_sXtMjAu3e6jNX=vA@mail.gmail.com>

I do remember doing that with my old HROs where it is mandatory when  
changing coils. Arden has a point about the possibility of sparks during  
switching. Manufacturers would have pointed it out in the user manuals at  
least as a recommendation. Maybe in very early receivers this may have been  
a good practice.



73s

Guido KP4FAR

On Monday, November 30, 2015, Niel Wiegand <nielwiegand at aggienetwork.com> wrote:

> With a National HRO it is esp. important to turn off the B+. As you pull a coil out or insert a coil it is possible to get across high voltage.

>

> Niel - W0VLZ

> <https://www.prismnet.com/~nielw/wa5vlz.htm>

>

> Guido Santacana via BoatAnchors wrote:

>>

>> Back in the late 70s my BA benefactor and Elmer, who was also an excellent

>> electronic technician specializing in communications gear and an extra

>> class from that era, told me that I should always turn off B+ before a band

>> change in our old receivers.

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